

**WILLCOX INSPECTIONS**  
**713-461-0009**  
**www.willcoxinspections.com**

**PROPERTY INSPECTION REPORT**

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**Prepared For:** Client A  
(Name of Client)

**Concerning:** 123 ABC Street Houston, Texas  
(Address or Other Identification of Inspected Property)

**By:** Fred Willcox Professional Inspector #160 2011  
(Name and License Number of Inspector) (Date)

**File No.** 713-461-0009 www.willcoxinspections.com

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This property inspection report may include an inspection agreement (contract), addenda, and other information related to property conditions. If any item or comment is unclear, you should ask the inspector to clarify the findings. It is important that you carefully read ALL of this information.

This inspection is subject to the rules (“Rules”) of the Texas Real Estate Commission (“TREC”), which can be found at [www.trec.state.tx.us](http://www.trec.state.tx.us).

The TREC Standards of Practice (Sections 535.227-535.233 of the Rules) are the minimum standards for inspections by TREC-licensed inspectors. An inspection addresses only those components and conditions that are present, visible, and accessible at the time of the inspection. While there may be other parts, components or systems present, only those items specifically noted as being inspected were inspected. The inspector is not required to move furnishings or stored items. The inspection report may address issues that are code-based or may refer to a particular code; however, this is NOT a code compliance inspection and does NOT verify compliance with manufacturer’s installation instructions. The inspection does NOT imply insurability or warrantability of the structure or its components. Although some safety issues may be addressed in this report, this inspection is NOT a safety/code inspection, and the inspector is NOT required to identify all potential hazards.

In this report, the inspector will note which systems and components were Inspected (I), Not Inspected (NI), Not Present (NP), and/or Deficient (D). General deficiencies include inoperability, material distress, water penetration, damage, deterioration, missing parts, and unsuitable installation. Comments may be provided by the inspector whether or not an item is deemed deficient. The inspector is not required to prioritize or emphasize the importance of one deficiency over another.

Some items reported as Deficient may be considered life-safety upgrades to the property. For more information, refer to Texas Real Estate Consumer Notice Concerning Recognized Hazards, form OP-I.

This property inspection is not an exhaustive inspection of the structure, systems, or components. The inspection may not reveal all deficiencies. A real estate inspection helps to reduce some of the risk involved in purchasing a home, but it cannot eliminate these risks, nor can the inspection anticipate future events or changes in performance due to changes in use or occupancy. It is recommended that you obtain as much information as is available about this property, including any seller’s disclosures, previous inspection reports, engineering reports, building/remodeling permits, and reports performed for or by relocation companies, municipal inspection departments, lenders, insurers, and appraisers. You should also attempt to determine whether repairs, renovation, remodeling, additions, or other such activities have taken place at this property. It is not the inspector’s responsibility to confirm that information obtained from these sources

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is complete or accurate or that this inspection is consistent with the opinions expressed in previous or future reports.

Items identified in the report do not obligate any party to make repairs or take other action, nor is the purchaser required to request that the seller take any action. When a deficiency is reported, it is the client's responsibility to obtain further evaluations and/or cost estimates from qualified service professionals. Any such follow-up should take place prior to the expiration of any time limitations such as option periods. Evaluations by qualified tradesmen may lead to the discovery of additional deficiencies which may involve additional repair costs. Failure to address deficiencies or comments noted in this report may lead to further damage of the structure or systems and add to the original repair costs. The inspector is not required to provide follow-up services to verify that proper repairs have been made.

Property conditions change with time and use. For example, mechanical devices can fail at any time, plumbing gaskets and seals may crack if the appliance or plumbing fixture is not used often, roof leaks can occur at any time regardless of the apparent condition of the roof, and the performance of the structure and the systems may change due to changes in use or occupancy, effects of weather, etc. These changes or repairs made to the structure after the inspection may render information contained herein obsolete or invalid. This report is provided for the specific benefit of the client named above and is based on observations at the time of the inspection. If you did not hire the inspector yourself, reliance on this report may provide incomplete or outdated information. Repairs, professional opinions or additional inspection reports may affect the meaning of the information in this report. It is recommended that you hire a licensed inspector to perform an inspection to meet your specific needs and to provide you with current information concerning this property.

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**ADDITIONAL INFORMATION PROVIDED BY INSPECTOR**

**STRUCTURAL INSPECTION**

**PURPOSE:** The purpose of a structural inspection is to perform a visual inspection, in a limited period of time, of the structural components of the building and to express an opinion as to whether, in the sole opinion of the inspector, they are performing without the obvious need of immediate repair or restoration. The main objective of the inspection and of this report is to better appraise you, our client, of the conditions existing at the time of the inspection. The inspection and this report are focused exclusively on the identification of significant defects. There should be no expectation on your part that all defects, existing or potential, were discovered during the inspection. There may be items listed in this report as "deficient" that may have been considered acceptable when originally installed or constructed, but due to changes in the industry may not be considered acceptable due to obsolescence, or life, safety, health or functionality considerations. If additional defects, deficiencies and/or hazards are not discovered during the repair, adjustment or replacement of the items noted in this report you should be concerned about the quality and effectiveness of the repairs that were allegedly made on the house, its parts, components or systems. We cannot and do not represent or warrant that the structure, or any of its parts or components, will continue to perform satisfactorily in a manner that will be acceptable to you or that they will continue to perform the function in the manner found at the time of the inspection. We do not represent or warrant that the future life of any item will extend beyond the time of this inspection. It is the intention and purpose of the inspection and of this report to **INFORM YOU EXCLUSIVELY** of the observations and opinions of the inspector, made on the day and at the time of the inspection, as to the condition and performance of the structure inspected. Use of this report by third parties is unauthorized and unintended. Opinions of the inspector are subjective based on his education and experience and should not be considered conclusive.

**THIS INSPECTION AND REPORT WERE PREPARED FOR YOUR EXCLUSIVE USE. USE OF THIS REPORT BY, OR LIABILITY TO THIRD PARTIES, PRESENT OR FUTURE OWNERS AND SUBSEQUENT BUYERS IS SPECIFICALLY EXCLUDED. RELIANCE ON THIS REPORT BY THIRD PARTIES, PRESENT OR FUTURE OWNERS AND SUBSEQUENT OWNERS IS AT THEIR**

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PERIL. NO WARRANTIES OR GUARANTIES TO THIRD PARTIES, PRESENT OWNERS OR FUTURE OWNERS ARE IMPLIED OR SHOULD BE ASSUMED.

Notwithstanding any provision in this agreement to the contrary, any dispute, controversy, or lawsuit between any of the parties to this agreement about any matter arising out of this agreement shall be resolved by mandatory and binding arbitration administered by the American Arbitration Association (“AAA”) pursuant to the Texas General Arbitration Act and in accordance with this arbitration agreement and the Commercial Arbitration Rules of the AAA. To the extent that any inconsistency exists between this arbitration agreement and such statutes and rules, this arbitration agreement shall control. Judgment upon the award rendered by the arbitrators may be entered in, and enforced by, any court having jurisdiction and in accordance with the practice of such court.

**Recovery for any claim arising from this inspection for whatever cause is strictly limited to the total amount of the fee paid to the inspector or this company by you, our client. Acceptance of this report confirms your acceptance of all the conditions contained in this report.**

(Client’s Names) agree to indemnify, defend, and hold harmless Fred Willcox and/or Willcox Inspections in any action brought against Fred Willcox and/or Willcox Inspections with respect to any and all claims, demands, causes of action, debts or liabilities, including reasonable attorneys fees arising out of or relating to this agreement or property inspection, whether or not resulting from the negligence of any party so indemnified, unless the cause is proved to be gross negligent action or intentional misconduct of the inspector.

In any dispute, controversy, or lawsuit arising from this agreement, the prevailing party shall be entitled to recover from the unsuccessful party, reasonable and necessary attorney’s fees incurred in connection with such dispute, controversy, or lawsuit. This agreement is entered into in Harris County, Texas and shall be construed and interpreted in accordance with the laws of the State of Texas. Venue for any action brought to enforce this agreement shall lie in Harris County, Texas.

Possession of this report does not carry with it the right of publication. This inspection report may not be used for any purpose or by any person other than the party to whom it is addressed without the written consent of the inspector. None of the contents of this inspection report, parts or components of this report or a copy of this report shall be conveyed to the public through any means, purpose or venue without the written consent and approval of the inspector.

Estimates for repair, if included, are provided as a courtesy and should be considered approximate. These estimates should not be viewed as bids for the actual performance of the work or of the repair suggested. It is recommended that you confirm the actual need for repair, the scope of the work, and the approximate cost with a qualified, appropriate service company. A PRUDENT BUYER WILL SECURE FIRM ESTIMATES FROM A QUALIFIED REPAIR COMPANY BEFORE CLOSING.

SCOPE: This inspection is limited to observations of only those components of the structure and those portions of the roof framing and surface readily accessible and visible without moving or the removal of any item or object that would obstruct visual observation. The comment of “inspected” noted by any section of this report means that, at a minimum, all parts and components of that section listed in the Minimum Standards of Inspections as published by the Texas Real Estate Commission were inspected. The rules of the Texas Real Estate Commission (TREC) can be found at [www.trec.state.tx.us](http://www.trec.state.tx.us). These standards are treated as minimums and they do not limit the ability of the inspector to inspect or comment on the property as the inspector deems appropriate. The inspector is not a registered professional engineer and a visual inspection does not contain engineering methods or computations. According to Webster’s Dictionary, “engineering” is “the application of science and mathematics by which the properties of matter and the sources of energy in nature are made useful to people; the design and manufacture of complex products.” No such “engineering” activities occurred during this visual inspection. Any item not capable of

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being seen at the time of the inspection, that is concealed by objects, vegetation or the finishes of the structure is specifically excluded as being beyond the scope of this inspection. Conditions not readily and visually apparent at the time of the inspection were not considered in reaching the conclusions or rendering the opinions contained in this report.

Specifically excluded from the inspection and this report are:

- 1) boring, digging or probing the soil or structure
- 2) location or effects of geological faults or of any underground structure or object
- 3) location of gas lines and/or systems
- 4) presence of asbestos and/or radon gas
- 5) lead based paint and/or products made from or containing lead
- 6) adequacy of site drainage
- 7) opinions relating to compliance with any specifications, legal and/or code requirements or restrictions of any kind, and
- 8) determination of the presence or health effects of molds, mildew, etc.

The following items are beyond the scope of this inspection and will not be inspected unless otherwise specifically stated in this report: Underground items (such as utilities), gas lines, fuel quality, environmental items (such as fuel tanks), telephone systems, television and/ or satellite systems, elevators, central vacuum systems, detached structures, bulkheads / docks and piers, fences / yard enclosures, intercoms, sound systems, security and fire and/or smoke detection systems, fire sprinkler systems, water-conditioning equipment, drain or waste ejector pumps, water mains, sewer systems, water wells / springs, lawn sprinkler systems, swimming pools, spas, hot tubs, saunas, steam baths, fountains, waterfront structures and equipment, solar systems, outdoor cooking equipment, free-standing appliances, playground equipment, or personal property.

**NOTE: No environmental inspections of any kind were performed during this inspection. Even if comments are made regarding certain aspects or issues, inspections and/or any determination of the presence or possible dangers of materials organisms or microbial organisms including, but not limited to asbestos, lead, formaldehyde, mildew, molds, fungi, etc. are specifically excluded from the inspection and from this report. No intrusive tests or methods damaging to sound materials were employed. No indoor air quality test was performed. If you have any concerns over the presence or possible future growth of any of these type items, you should, as part of your due diligence, have the environmental inspections of your choice performed on the house prior to closing.**

Items not specifically noted as “inspected” in the following report are not cover by the report and should not be assumed to be good, bad, performing without the obvious need of repair or restoration by the lack of notation. This report is focused exclusively on the identification of significant defects. No verbal statements by the inspector are to be considered a part of the inspection or of this report. It is again emphasized that this is a limited visual inspection made in a limited amount of time. Some defects may not be apparent during the time of the inspection. This is not intended to be an exhaustive evaluation of the structure, nor is it intended to be a total list of defects, existing or potential. The inspection and this report must not be considered a guarantee, warranty or policy of insurance or of continuation of performance of any kind. Excluded from the inspection and from this report are warranties or guarantees of future performance or certification that any or all items are in compliance with legal and/or code requirements, any manufacturer’s specifications or installation instructions, municipal ordinances, neighborhood deed restrictions or that any system or component is of the correct capacity. Unless specifically noted in this report, the inspection and this report do not address product safety recalls. No inspection or anticipation is made or advice is given regarding the need for continuing or future maintenance of the structure or grounds. The inspector does not take care, custody or control of the structure at any time. If the house is occupied at the time of the inspection, it is possible that visible defects may have been concealed or covered by furniture, fixtures, appliances and/or clothing, etc. Once the owner/occupant vacates the property, any visible defect that becomes apparent should be reported to you via an updated seller’s disclosure form. The

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photographs included in this report are intended to be used to illustrate some, but not all, of the defects and to clarify the text information in the report. All photographs taken at the subject property may not be included in the report. The photographs are not intended to be all inclusive or to describe all conditions noted on the property.

This report was prepared on a computer. Infrequently, a word or part of a sentence may be accidentally deleted or altered during editing. Should you encounter such a condition or any other sentence structure irregularity, please contact me as soon as possible. The necessary corrections will be made and you will be provided with a corrected report. In addition you are urged to contact me for an explanation and/or clarification of any items in the report that you do not understand.

### MECHANICAL REPORT

This limited visual inspection was performed, for the exclusive use of the client, with the intent of observing and reporting deficiencies apparent at the time of the inspection without disassembly of any unit or item inspected. This inspection was made of the physical condition of electrical switches, cover plates and convenience outlets that were accessible without moving furniture or fixtures. All functional equipment, in operable condition, was operated in at least one, but not necessarily every, mode to demonstrate its condition. Compliance with codes and/or adequacy of wiring and circuitry is beyond the scope of this inspection and report and is specifically excluded. If more in-depth information is desired or required on the electrical system or systems, it is recommended that a qualified electrician be consulted. It is emphasized that this is a limited visual inspection made in a limited amount of time. Some defects may not be apparent during the time of the inspection. This inspection is not intended to be an exhaustive evaluation of all the systems and appliances in the structure, nor is it intended to be a total list of defects, existing or potential. Items marked as "inspected" mean that, at a minimum, all parts and components of that section or item listed in the Minimum Standards of Inspections as published by the Texas Real Estate Commission were inspected. Items not noted as "inspected" in the following report are not covered by the report and should not be assumed to be good, bad, performing the function for which they were intended or in need of repair by lack of notation. No verbal statements by the inspector are to be considered a part of the inspection or of this report.

INSPECTIONS OF GAS LINES AND/OR SYSTEMS OR FOR THE PRESENCE OF ASBESTOS, LEAD PAINT, PRODUCTS CONTAINING LEAD, RADON GAS OR OTHER ENVIRONMENTAL HAZARDS, INCLUDING MOLDS, MILDEWS OR FUNGI, ARE SPECIFICALLY EXCLUDED.

Additional pages may be attached to this report. Read all pages of this inspection report very carefully. This report may not be complete without the attachments. If an item is present in the property but is not inspected, the "NI" column will be checked and an explanation is necessary. The inspector may provide comments whether or not an item is deemed in need of repair.

REFERENCES TO THE BUILDING CODES ARE IN ITALICS AND UNDERLINED TEXT AND ARE USED SOLELY FOR CLARIFICATION OF THE ITEM NOTED. THE QUOTATIONS FROM THE BUILDING CODE ARE FROM THE INTERNATIONAL BUILDING CODE PUBLISHED BY AND COURTESY OF THE INTERNATIONAL CODE COUNCIL, INC. UNLESS OTHERWISE NOTED. IT SHOULD BE UNDERSTOOD THAT OLDER HOMES WILL NOT MEET CURRENT CODES AND THAT THESE HOUSES WERE NOT CONSTRUCTED TO ANTICIPATE FUTURE CODES, REQUIREMENTS OR THE CREATION OF NEW LIFE/SAFETY DEVICES OR EQUIPMENT. NOTATIONS OF CURRENT CODE REQUIREMENTS AND OF MODERN LIFE/SAFETY EQUIPMENT ARE MADE TO ADVISE YOU THAT THESE CONDITONS, APPLIANCES AND DEVICES EXIST AND THAT YOU MAY WISH TO UPGRADE THE HOUSE TO A LEVEL OF SAFETY THAT SATISFIES YOU.

### HOW TO READ THIS REPORT

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**DEFICIENCIES:** These are items that are not functioning properly, were improperly installed, and are considered to be unsafe or items that are functionally obsolescent. If you understand the comment in bold you do not need to read the information section that follows.

**INFORMATION:** The information section explains the deficiency noted in the part, component or system. This information is provided to give you a clearer understanding of the defect noted.

**REFERENCES:** References are the materials I use to provide the basis of calling out a deficiency. Reference materials are from the model building codes, manufacturer’s installation instructions or from trade association manuals. The model building codes require that the minimum standards of the building code or the manufacturer’s installation instructions, whichever is more restrictive, be used on every part, component and system in the structure. If the seller or the builder wishes to dispute an item in this report, the seller or builder should provide you with the source material they are relying on to refute the statement in this report. Common building practices or the “everybody does it” defense is not recognized as compliance with any model building code or manufacturer’s installation instruction.

**NOTE OR NOTICE:** Information provided on things that you should know about the structure or a part component or system. Notes or Notices are not indications of a defect or deficiency.

**PHOTOGRAPHS:** Photographs are used to show you an example of the deficiency noted in the report. The photographs DO NOT show all defects or locations of the noted deficiency in most cases.

**\*\*\*\*(NOTICE: SO AS TO NOT PREJUDICE ANY INDIVIDUAL HOUSE, INFORMATION FROM SEVERAL HOUSES WAS USED IN CREATING THIS SAMPLE)**

## I. STRUCTURAL SYSTEMS

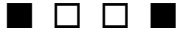
The subject structure was a two story, single family dwelling supported on what appeared to be a concrete slab-on-grade foundation. The exterior cladding systems were brick veneer and wood fiber products siding. The roof was covered with composition shingles. The house was not occupied at the time of the inspection. For the purposes of this report the house will be considered to be facing west. The weather was partly cloudy at the time of the inspection.



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**NOTICE: There was no seller’s disclosure form available at the time of the inspection. You should obtain a copy of the seller’s disclosure form prior to the termination of any due diligence option period.**

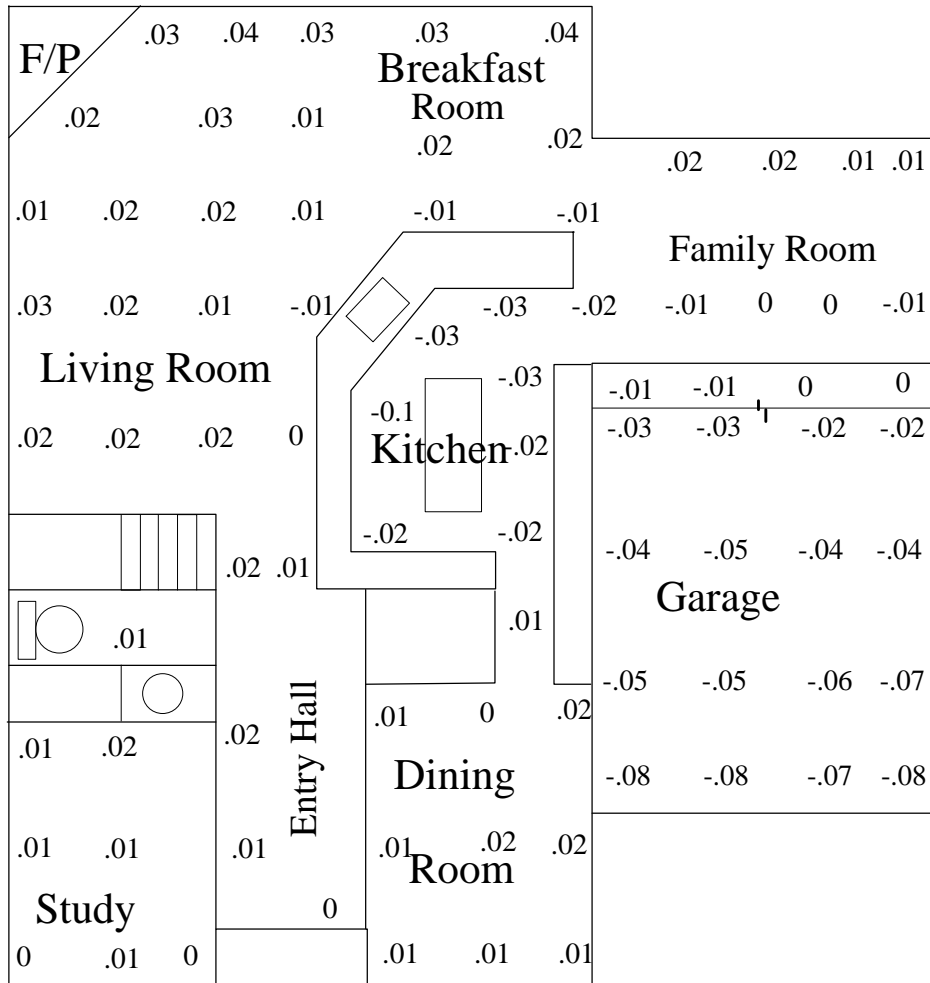


**A. Foundations**

Type of Foundation(s): appeared to be a concrete slab on grade  
 Comments:

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Information:** The foundation appeared to be performing without the obvious need of immediate remedial leveling at the time of the inspection, in my opinion.



*NOTE: The units of measurement used to take the elevation reading were 10ths and 100ths of a foot. One inch is approximately 0.083 feet. Two inches is approximately 0.167 feet. It should be noted that “movement” is a function of time. The surface elevations shown above represent only a “snapshot” in time and cannot be used to establish the actual magnitude of any differential movements that may have occurred over time. There is no rational assumption that any foundation is constructed in a “level” or “flat”*

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*condition. Indications of actual differential movement include the presence and magnitude of floor slopes coupled with cracks in the drywall and masonry wall covering materials, out of square window frames and out of square door frames.*

**Notice:** Cracks were noted on the surface of the slab on the back porch, etc.

**Information:** Cracks in concrete do not, in and of themselves, indicate a structure deficiency in the construction or performance of a foundation. The interior surfaces of the foundation of the house were concealed by floor covering materials and could not be inspected. This information is provided so that you are aware that I knew the cracks were present when I rendered my opinion on the performance of the foundation at the time of the inspection.

■ □ □ ■ **B. Grading & Drainage – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency:** The surrounding soils were in contact with or were to close to the exterior finishes of the house and garage in some areas.

**Information:** The soil should be lowered to provide a clearance of four inches between the surface of the soil and the lower edge of the exterior veneer if the veneer is masonry and six inches if the veneer is other than masonry per Section R404.1.6 of the IRC. Soil in contact with the veneer allows easy access to the wall cavity and framing to insects. This situation also allows moisture to penetrate into the framing and interior wall coverings and floor coverings. The soil should be graded to prevent water from standing next to the foundation.

References: 404.1.6 Height above finished grade.

Concrete and masonry foundation walls shall extend above the finished grade adjacent to the foundation at all points a minimum of 4 inches (102 mm) where masonry veneer is used and a minimum of 6 inches (152 mm) elsewhere.

■ □ □ ■ **C. Roof Covering Materials**

Type(s) of Roof Covering: Composition Shingles

Viewed From: a ladder at the eaves of the roof

Comments:

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

NOTE: The surface of a roof begins to deteriorate as soon as it is placed into service and exposed to the elements. The degree of deterioration accelerates with the age of the roof and cannot be determined accurately by a visual inspection. Roof leaks can and may occur at anytime, regardless of the age of the roof, and cannot be accurately predicted. If roof leaks do occur, their presence does not necessarily indicate the need for total replacement of the roof coverings. Responsibility for future performance of the roof is specifically excluded from this report.

**NOTICE:** The surface of the roof was not accessible to this inspector. The roof was viewed from a ladder at the lower eaves of the roof. All slopes of the roof could not be seen by this method. An inspection of the roof covering materials in this manner is not an effective inspection. A competent roofer with the equipment capable of safely reaching and staying on all of roof surfaces should be engaged to perform a proper inspection of the surface of the roof covering materials.



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**Deficiency: Some of the shingles had not bonded or sealed to each other.**

Information: These shingle tabs could be lifted by hand. An adhesive strip is manufactured into each shingle. The adhesive is softened by the heat of the sun and bonds to the shingle below. Some manufacturers contend that the bonding or sealing of the shingles to each other is more important than the location of the fasteners in securing the shingles to the roof deck. Failure of the shingles to bond makes it far more likely that the shingles will be stripped off the roof when the roof covering material is subjected to high wind loads. Failure of the shingles to bond or seal is often an indication of a manufacturer's defect. The manufacture should be contacted for recommendations on the replacement of the shingles or for the application of an adhesive to seal the shingles.

References: *R905.2.4 Asphalt shingles.*

*Asphalt shingles shall have self-seal strips or be interlocking, and comply with ASTM D225 or D 3462.*



**Deficiency: The roofing felt did not extend to the rakes or bottom of the roof deck in all of the areas that were inspected.**

Information: This is an improper installation as the roof decking material may be exposed to water. The roofing felt should be extended all the way to the edge of the rakes and bottom of the roof decking material and the felt should be properly terminated on top of the drip edge flashing at the drip edges of the roof. The edge flashing should be installed on top of the roofing felt at the rakes to help prevent the felt from being stripped from the roof deck in high winds.

References: *See below.*

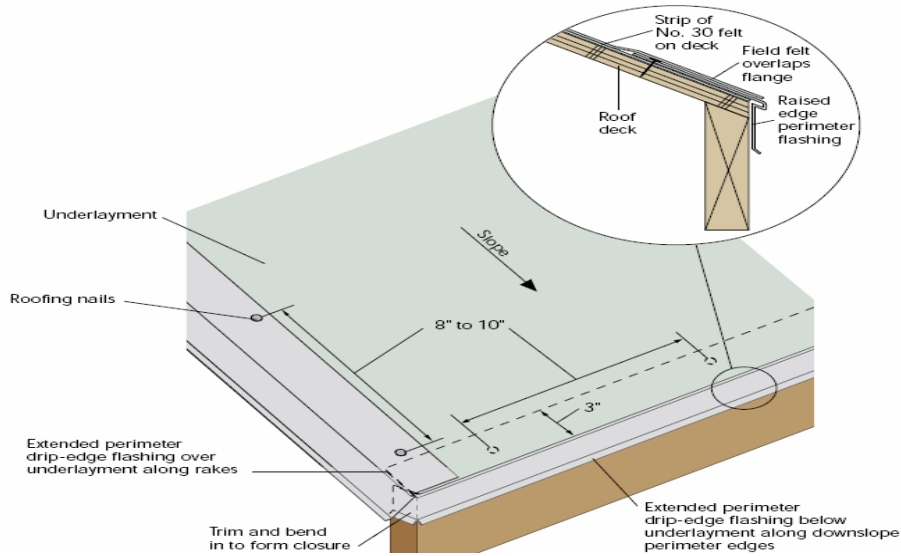
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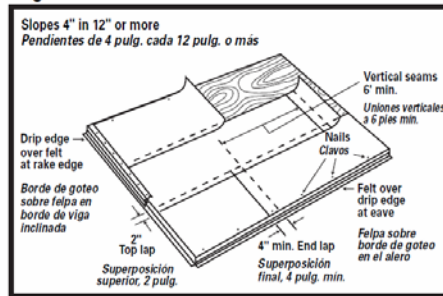
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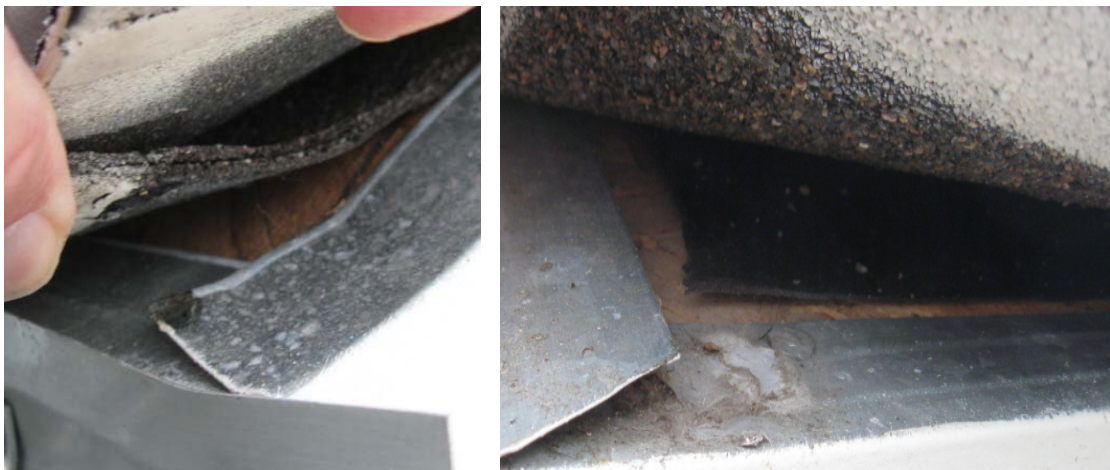
Courtesy of the American Plywood Association, Inc.

- 2 Underlayment:**
- Standard Slope (4" in 12" or more)**  
Application of underlayment, metal drip edges, and eaves flashing:  
See Fig. 2.
  - Low Slope (2" in 12" to less than 4" in 12")**  
Application of underlayment and metal drip edges: See Fig. 2A.

**Fig. 2 Underlayment Standard Slope**  
Capa inferior con pendiente estándar



Courtesy of Owens Corning, Inc.



**Deficiency:** Some of the discharge ends of the side wall flashing material terminated under the shingles.

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Information: The discharge ends must terminate on top of the shingles to prevent water from being directed onto the roofing felt. The flashing material should be properly terminated.



**Deficiency: There was a partial dead valley over the front entry area.**

Information: A dead valley is a valley that terminates against a wall and causes water to collect. The collection of water can be deep enough to defeat the flashing system which will result in leaks. As water collects, the load on the roof deck increases causing the roof deck to sag. The more the roof sags, the more water collects. The collection and weight of the water can cause flashing materials and/or the valley system to separate which would allow water to penetrate the roof covering system and enter the structure. In this case, the J flashing was raised creating an obstruction to the flow of water. In addition to restraining the flow of water, the J flashing installation has caused the shingles to deform. The deformation of the shingles can cause the shingles to crack and break. A qualified, skilled roofer should be engaged to closely examine this area to determine that the roof covering materials are properly flashed and sealed to prevent future leaks.



**Deficiency: There were no flashing materials installed at the junctions of the roof surfaces with the exterior walls at some of the extensions of the roof deck around the corners of the walls.**

Information: Flashing materials seal the opening between the roof surfaces and the exterior walls. The lack of flashing materials left openings into the framing. Flashing materials should be installed at all of the roof/wall junctions.

**Deficiency: There was some loss of the gypsum chip layer on the surface of the shingles.**

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**Information:** The gypsum chip layer serves to protect the shingle components from the ultra violet rays of the sun and the gypsum chip also serves as a fire retardant. The loss of gypsum chip generally indicates advanced aging of the shingles although it can, in some cases, indicate a manufacturers defect if the shingles are fairly new. Once the gypsum chip layer is diminished and the underlying parts of the shingles are exposed to ultra violet light, the shingles break down more rapidly. The shingles were still pliable and were, overall, in good condition. The beginning of the loss of the gypsum chip should be taken as an indication that the shingles are getting old. Extended performance of the roof covering materials should not be expected.



**Deficiency:** The dish for the satellite antenna system had been bolted to the roof deck through the shingles.

**Information:** There was no attempt to make the junction of the bracket with the shingles or the penetrations of the bolts through the shingles water proof. The bracket junction and the bolt penetrations should be made water proof or the dish should be removed from the surface of the roof. If the dish is removed, the damaged shingles should be replaced.



**Notice:** The sewer vent pipe penetrations of the roof deck were sealed with neoprene roof jacks.

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Information: The effective life of these roof jacks is limited to a few years. The roof jacks should be checked annually for cracks and separations from the vent pipes. These type jacks are known to leak after a few years use.

**Deficiency: J flashing was used to seal the junctions between the roof’s surface and the side walls.**

Information: Section R905.2.8.4 of the International Residential Code (IRC) and the manufacturer of the shingles, per the instructions on the shingle bundles and on their websites, require that the junctions between the roof’s surface and the side walls be flashed by the step flashing method. Step flashing creates redundancy in the metal sealing the roof/wall junctions. J flashing only provides a single layer of metal. Redundancy in water proofing materials on the surface of the roof is preferable. Many builders or roofers state that J flashing is an “approved alternate method”. You should determine who “approves” the material as an alternate method and what their liability to you would be in case of a leak and damage to your property. Building officials do not have the absolute right to change the code. They can only change the code when a code cannot be met and the system used as an alternative at least meets the requirements of the code section.

References: 905.2.8.4 Sidewall flashing.

Flashing against a vertical sidewall shall be by the step-flashing method.

R104.1 General.

The building official is hereby authorized and directed to enforce the provisions of this code. The building official shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures shall be in conformance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

R104.10 Modifications.

Wherever there are practical difficulties involved in carrying out the provisions of this code, the building official shall have the authority to grant modifications for individual cases, provided the building official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, life and fire safety requirements or structural. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.

The building official has the authority to accept modifications of the code provisions in specific cases. For the building official to allow a modification, he or she must first determine that the strict application of the code is impractical for a specific reason. When the building official grants a modification, it is not a waiver from the requirements. It should be thought of as fulfilling the requirements to the greatest extent possible but deviating from the requirements slightly in order for the intent of the provisions to be met. The modification must not lessen the health, fire-safety, life-safety or structural requirements of the code. All modification actions must be recorded in the files of the building department.

R104.11 Alternative materials, design and methods of construction and equipment.

The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved

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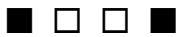
where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code. Compliance with the specific performance-based provisions of the International Codes in lieu of specific requirements of this code shall also be permitted as an alternate.

**Deficiency:** Leaves, vegetation and debris were noted in the gutters.

Information: The gutters should be cleared of debris.

**Deficiency:** There were extensions on the downspouts that held water.

Information: These flexible extension pipes are used to extend the discharge of the water from the gutters out of the flower beds to reduce the erosion of the soils in the beds. These extension pipes must pitch downward to drain completely. Water held in the drain pipe extensions can allow the growth of microbial organisms and provide a breeding ground for insects and pests.



**D. Roof Structure & Attic**

*Viewed From: the Interior of the Attic*

*Approximate Average Depth of Insulation: 10 inches*

*Approximate Average Thickness of Vertical Insulation: 6 inches*

*Comments:*

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Walkways in the attic were limited to the areas of the HVAC equipment and the water heater. Much of the attic area could not be safely accessed. The areas of the attic without walkways were not inspected except by the use of a flashlight. Information.**

**Deficiency:** Rafter ties were improperly installed or were not present in the attic of the garage.

Information: Rafter ties are used to prevent the exterior walls parallel to the joists from spreading from the loads imposed by the hip roof when the joists are not installed parallel to the rafters. The rafter ties, in this case, were strong backs. The strong backs were not connected to the ends of the rafters or to the top of the

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exterior wall. There were gaps in the strong backs which reduce the strength of the strong backs. There were also an inadequate number of rafter ties installed per Section R802.3.1 of the IRC.

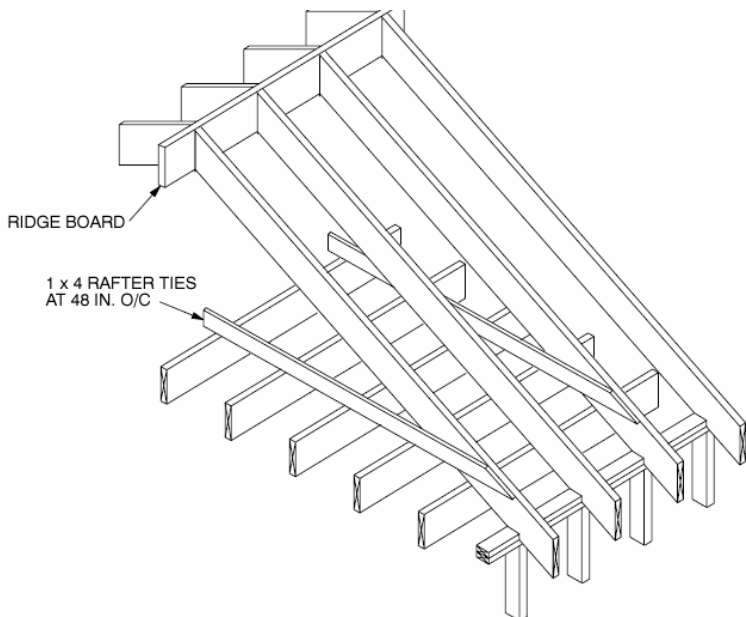
References: 802.3.1 Ceiling joist and rafter connections.

Ceiling joists and rafters shall be nailed to each other in accordance with Tables R602.3(1) and R802.5.1(9), and the assembly shall be nailed to the top wall plate in accordance with Table R602.3(1). Ceiling joists shall be continuous or securely joined where they meet over interior partitions and nailed to adjacent rafters to provide a continuous tie across the building when such joists are parallel to the rafters.

Where ceiling joists are not parallel to rafters, subflooring or metal straps attached to the ends of the rafters shall be installed in a manner to provide a continuous tie across the building, or rafters shall be tied to 1-inch by 4-inch (25.4 mm by 102 mm) (nominal) minimum-size cross ties. The connections shall be in accordance with Table R602.3(1) or connections of equivalent capacities shall be provided. Where ceiling joists or rafter ties are not provided at the top plate, the ridge formed by these rafters shall also be supported by a girder designed in accordance with accepted engineering practice.

Rafter ties shall be spaced not more than 4 feet (1219 mm) on center.

So that joists do not become accidentally displaced and so that they transfer thrust from the rafters to the ceiling joists, a mechanical connection to supporting members as shown in Commentary Figure 802.3.1(1) must be provided. To resist the horizontal thrust generated at the exterior walls by the loading of rafters, a continuous tie between the exterior walls is required. Commentary Figures R802.3.1(2) and R802.3.1(3) illustrate methods of accomplishing this. In Commentary Figure R802.3.1(3), the ceiling joists running parallel with the roof rafter framing provide the continuous tie. Where ceiling joists are not parallel with the roof rafters, separate cross ties (rafter ties) are to be provided, as shown in Commentary Figure R802.3.1(2). From the Commentary to the IRC.



For SI: 1 inch = 25.4 mm.

**NOTE:** LOCATE TIES AS NEAR AS PRACTICAL TO THE TOP OF CEILING JOISTS

**Deficiency: The attic was inadequately ventilated in my opinion.**

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Information: While the ventilation of the attic may meet the requirements of the IRC, the IRC is intended to be a worldwide code. Its provisions may not be adequate or reasonable for certain areas of the globe. The IRC in no way limits a builder from exceeding the minimum requirements of the code in order to provide a better product for the consumer. Additional ventilation should be installed in my opinion.

**Deficiency: The hall attic access ladder was out of adjustment.**

Information: The springs did not catch on the hinge arms making the ladder difficult to close. The door springs should be adjusted so that the unit can be closed properly.



**Deficiency: The inspection of the wall corners, framing penetrations, attic access ladder and/or door frames in the accessible attic areas revealed that all of the junctions and penetrations were not sealed in accordance with the International Energy Code, Section 502.1.4.2 and Section N1102.1.10 of the International Residential Code, as required by the State of Texas.**

Information: It is important that all areas, including those that are not visible or accessible, be properly sealed as your air conditioning system has been designed with the idea that the house has been properly sealed. If the house is not properly insulated and sealed, your air conditioning system may not function properly. This can lead to higher relative humidity levels in the house, poor air distribution and to increased utility expenses as the systems have to operate longer to lower internal temperatures.

References: *N1102.1.10 Air leakage.*

All joints, seams, penetrations; site-built windows, doors, and skylights; openings between window and door assemblies and their respective jambs and framing; and other sources of air leakage (infiltration and exfiltration) through the building thermal envelope shall be caulked, gasketed, weather-stripped, wrapped, or otherwise sealed to limit uncontrolled air movement.



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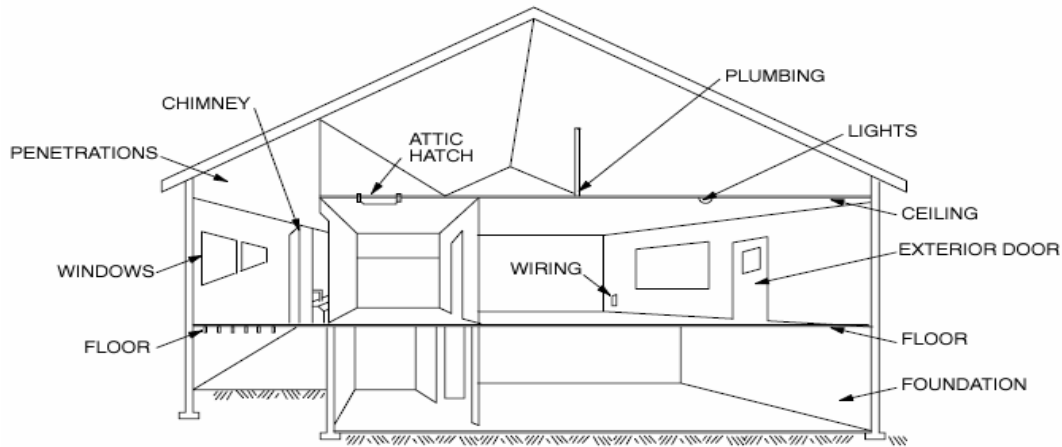


Figure N1102.1.10  
TYPICAL SOURCES OF AIR LEAKAGE IN THE HOME



**Deficiency:** There was no firestop at the entrance of the breezeway in the garage.

**Information:** A fire stop is required at this location so that if a fire starts in the garage, the fire cannot immediately transfer through the breezeway into the house. As your builder located the electrical wiring so that it ran through the breezeway, no effective fire stop can be installed. A heat alarm, connected to your main alarm system, should be installed in the garage so that if a fire starts in the garage, you and your family will at least have the opportunity to escape from the house. For further information, see Sections R309.2, R602.8, E3302.2 and E3302.3 of the IRC (International Residential Code).

References: *R309.2 Separation required.*

*The garage shall be separated from the residence and its attic area by not less than 1/2-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.*

*Numerous potential hazards exist within garages because occupants of dwelling units tend to store a variety of hazardous materials there. Along with this and the potential for carbon monoxide build-up within the garage, the IRC requires that the garage be separated from the dwelling unit and the attic with at least 1/2-inch (12.7 mm) gypsum board or other equivalent material. If a habitable room is above the garage, the separation must be at least 5/8-inch (15.9 mm) Type X gypsum board or equivalent. There are two*

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primary reasons for providing an enhanced fire endurance for a garage ceiling located beneath a habitable room. First, a fire occurring in a garage may well go undetected for an extended period prior to activation of a detector or other visual alerting. Second, the inherent fire load and hazardous household activities associated with a garage necessitate this additional level of protection if fire suppression forces are to have a reasonable opportunity to contain a garage fire to the area of origin. The single layer of 5/8-inch Type X gypsum at the garage ceiling increases the fire endurance of the assembly considerably, from 15 minutes for a 1/2-inch layer, to at least 40 minutes, or a 167-percent increase in endurance. When added to the rating for floor joists and certain subflooring combinations, the final endurance is close to 1 hour. Additionally, the exterior walls of the garage are required to have 1/2-inch gypsum board on the interior face where they support floors separating all or part of a dwelling unit above the garage. Commentary Figure R309.2 shows two locations of gypsum wallboard; each achieves the protection required by the code. From the Commentary to the IRC.



■ □ □ ■ **E. Walls (Interior & Exterior) – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: There was a crack in the drywall ceiling of the single garage.**

**Information:** The crack should be repaired to match the existing structure.

**Deficiency: There was a crack in the brick veneer on the north wall of the house.**

**Information:** The crack in the brick veneer should be repointed by a skilled mason to match the existing structure.

**Deficiency: The frieze boards were separated at the northwest corner of the house.**

**Information:** The frieze boards had gapped open due to warping of the frieze board materials. The frieze boards should be replaced. The new frieze boards should be painted to match the existing structure.

**Deficiency: The brick veneer extended over the edge of the foundation in some areas.**

**Information:** The construction and support of the wall can produce a large moment and the brick can rotate away from the structure, if it is not properly supported by the slab and tied to the structural framing. As the wall has stood without apparent damage since the house was constructed, it cannot be said that this

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condition requires immediate repair, and, in fact, that wall may never require repair. However, should cracks appear in the veneer, a competent mason should be consulted to determine if the lack of proper support is the cause of the cracks and what steps should be taken to prevent additional damage.

**Deficiency: The window frames, door frames and other wall penetrations installed in the brick veneer were not properly flashed or drained.**

Information: The model building codes along with the instructions of the Brick Industry Association, Inc. and the manufactures of wall sheathing materials require the installation of through wall flashing above the window and door frames and below the window sills and at other wall penetrations. The through wall flashing should extend from behind the wall sheathing and should terminate on the exterior of the veneer. Weep holes, for drainage of the wall cavity at the window frames, are required to be formed in the veneer above the door and window frames and below the sills and at any other through wall flashing termination. While weep holes had been formed in the veneer above the window and door frames, the lintels were used as the flashing. Lintels are structural support members for the veneer and are not intended for use as drains. For further information, see Sections R703.7.5, R703.7.6 and R703.8 of the IRC (International Residential Code) along with the referenced drawings in the code. For further information, go to [www.bia.org](http://www.bia.org) on the World Wide Web, which is the website of the brick manufacturer's association. You can also go to the American Plywood Association's website. There are free sites, although they may require you to sign up for a password. Once you have gained access, go to the technical notes section from information on the requirements of the manufacturer's association for the drainage of the wall cavities. Proper through wall flashing should be installed in all required areas.

References: 703.7.5 Flashing.

Flashing shall be located beneath the first course of masonry above finished ground level above the foundation wall or slab and at other points of support, including structural floors, shelf angles and lintels when masonry veneers are designed in accordance with Section R703.7. See Section R703.8 for additional requirements.

703.7.6 Weepholes.

Weepholes shall be provided in the outside wythe of masonry walls at a maximum spacing of 33 inches (838 mm) on center. Weepholes shall not be less than 3/16 inch (4.8 mm) in diameter. Weepholes shall be located immediately above the flashing.

703.8 Flashing.

Approved corrosion-resistive flashing shall be provided in the exterior wall envelope in such a manner as to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. The flashing shall extend to the surface of the exterior wall finish and shall be installed to prevent water from reentering the exterior wall envelope. Approved corrosion-resistant flashings shall be installed at all of the following locations:

1. At top of all exterior window and door openings in such a manner as to be leakproof, except that self-flashing windows having a continuous lap of not less than 1 1/8 inches (28 mm) over the sheathing material around the perimeter of the opening, including corners, do not require additional flashing; jamb flashing may also be omitted when specifically approved by the building official.
2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
3. Under and at the ends of masonry, wood or metal copings and sills.
4. Continuously above all projecting wood trim.
5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.

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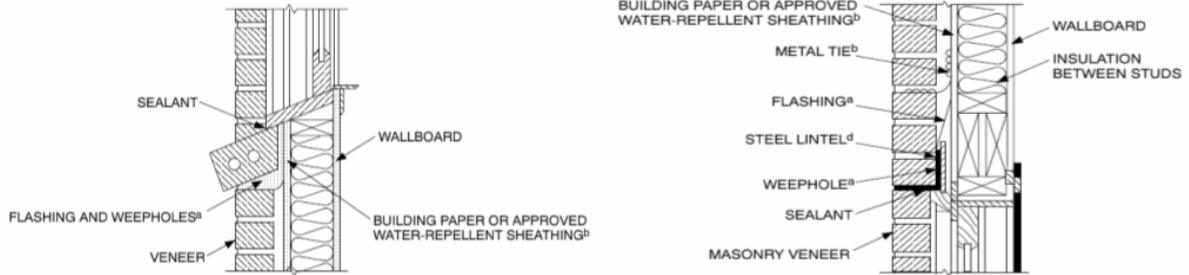
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6. At wall and roof intersections.

7. At built-in gutters.



Courtesy ICC, Inc

# Water Penetration Resistance - Design and Detailing

**Abstract:** Proper design, detailing and construction of brick masonry walls are necessary to minimize water penetration into or through a wall system. Many aspects of design, construction and maintenance can influence a wall's resistance to water penetration. The selection of the proper type of wall is of utmost importance in the design process as is the need for complete and accurate detailing. In addition to discussing various wall types, this *Technical Note* deals with proper design of brick masonry walls and illustrates suggested details which have been found to be resistant to water penetration.

**Key Words:** barrier, design, detailing, drainage, flashing, installation, rain, wall types, weeps.

## SUMMARY OF RECOMMENDATIONS:

### Wall System Selection:

- Drainage walls provide maximum protection against water penetration
- Barrier walls are designed to provide a solid barrier to water penetration and provide good water penetration resistance
- Single wythe masonry walls require careful detailing and construction practices to provide adequate water penetration resistance

### Through Wall Flashing Locations:

- Install at wall bases, window sills, heads of openings, shelf angles, tops of walls and roofs, parapets, above projections, such as bay windows, and at other discontinuities in the cavity

### Through-Wall Flashing Installation:

- Lap continuous flashing pieces at least 6 in. (152 mm) and seal laps
- Turn up the ends of discontinuous flashing to form end dams
- Extend flashing beyond the exterior wall face
- Terminate UV sensitive flashings with a drip edge

### Weeps:

- Open head joint weeps spaced at no more than 24 in. (610 mm) o.c. recommended
- Most building codes permit weeps no less than 3/16 in. (4.8 mm) diameter and spaced no more than 33 in. (838 mm) o.c.
- Wick and tube weep spacing recommended at no more than 16 in. (406 mm) o.c.

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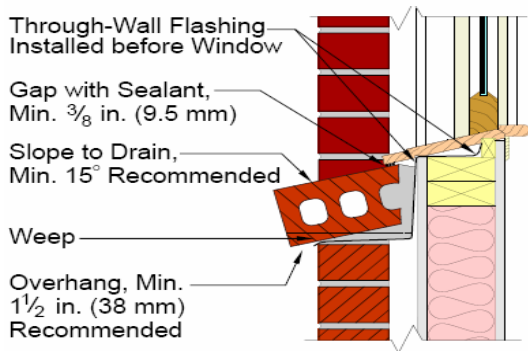
## DETAILING

### Through-Wall Flashing

Through-wall flashing is a membrane, installed in a masonry wall system, that collects water that has penetrated the exterior wythe and facilitates its drainage back to the exterior. Such flashing is essential in a drainage wall system, and is required as a second line of defense in a barrier wall system. Proper design requires flashing at wall bases, window sills, heads of openings, shelf angles, projections, recesses, bay windows, chimneys, tops of walls and at roofs. Flashing should extend vertically up the backing a minimum of 8 in. (203 mm). The water-resistant barrier on the backing should lap the top of the flashing. Examples of water-resistant membranes include No. 15 asphalt felt, building paper, certain high-density polyethylene or polypropylene plastics (housewraps) and certain water-resistant sheathings. Various types of flashing materials which may be used in the design of brick masonry and composite walls are covered in *Technical Note 7A*.

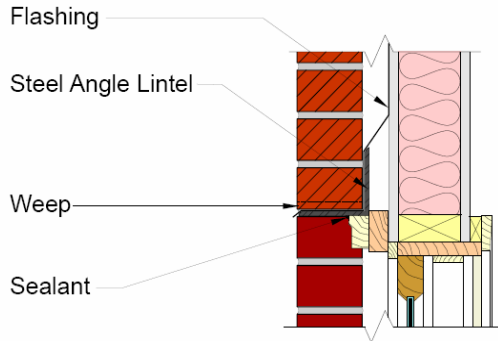
In regard to flashing, the designer must also address the following considerations:

**Extension Through Wall.** When possible, flashing should extend beyond the face of the wall to form a drip as shown in *Figure 7*. When using a flashing that deteriorates with UV exposure, a metal or stainless steel drip edge can accomplish this. It is imperative that flashing be extended at least to the face of the brickwork.



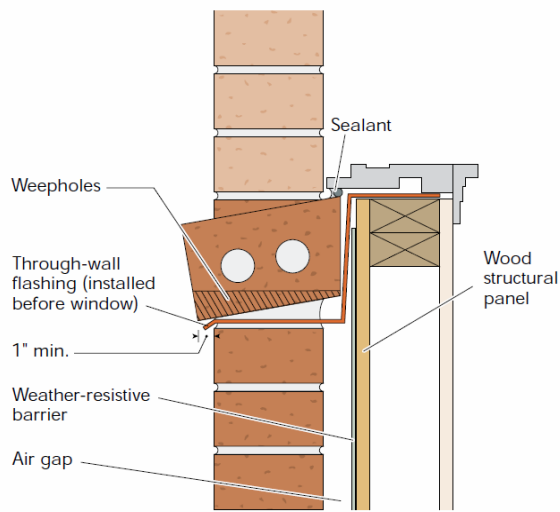
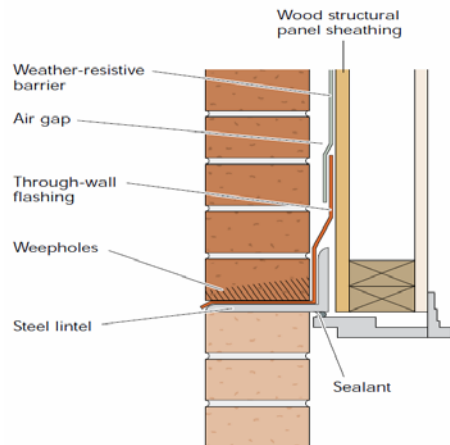
**Figure 11**  
Window Sill in Brick Veneer/Frame Wall

Courtesy of the Brick Industry Association, Inc. [www.bia.org](http://www.bia.org)



**Figure 14**  
Window Head in Brick Veneer/Frame Wall

#### CROSS SECTION OF WINDOW SHOWING INTEGRATION OF STRUCTURE'S WEATHER-RESISTIVE SYSTEM IN A WALL WITH BRICK VENEER



Courtesy of the Brick Industry Association, Inc. [www.bia.org](http://www.bia.org)

### **Deficiency: All penetrations through the cladding materials had not been sealed or flashed.**

Promulgated by the Texas Real Estate Commission (TREC) P.O. Box 12188, Austin, TX 78711-2188, 1-800-250-8732 or (512) 459-6544 (<http://www.trec.state.tx.us>). REI 7A-1

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Information: Any and all penetrations are required to be sealed and/or flashed in such a manner as to prevent water penetration through the cladding materials. All wall penetrations should be properly flashed and sealed.

References: *R703.7.5 Flashing, R703.7.6 Weepholes, and R703.8 Flashing.*

R703.7.5 Flashing.

Flashing shall be located beneath the first course of masonry above finished ground level above the foundation wall or slab and at other points of support, including structural floors, shelf angles and lintels when masonry veneers are designed in accordance with Section R703.7. See Section R703.8 for additional requirements.

*Flashing is necessary to close off the points of water entry at the first course of masonry above the finished ground level, as well as at other points of support such as at shelf angles and lintels. As always, flashing must be of an approved corrosion-resistant material. From the Commentary to the IRC.*

R703.7.6 Weepholes.

Weepholes shall be provided in the outside Wythe of masonry walls at a maximum spacing of 33 inches (838 mm) on center. Weepholes shall not be less than 3/16 inch (5 mm) in diameter. Weepholes shall be located immediately above the flashing.

*At a point directly above the flashing mandated by Section R703.7.5, weepholes must be provided to allow for the escape of any moisture that may have penetrated the masonry veneer. Because moisture will adversely affect the integrity of the wall if not removed from the wall assembly, weepholes must be installed within the maximum spacing specified in this section. The minimum diameter of the weepholes is also regulated. From the Commentary to the IRC.*

R703.8 Flashing.

Approved corrosion-resistant flashing shall be applied shingle-fashion in such a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed at all of the following locations:

1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage.
2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
3. Under and at the ends of masonry, wood or metal copings and sills.
4. Continuously above all projecting wood trim.
5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.
6. At wall and roof intersections.
7. At built-in gutters.

*The code requires that all points subject to the entry of moisture be appropriately flashed. Roof and wall intersections and parapets create significant challenges, as do exterior wall openings exposed to the weather. Where wind-driven rain is expected, the concerns are even greater. Although the code identifies a number of locations where flashing is specifically required, the entire exterior envelope must be weather-tight to protect the interior from weather. Therefore, any location on the exterior envelope that provides a route for the admission of water or moisture into the building must be properly protected. Commentary Figure R703.8 illustrates examples of flashing. From the Commentary to the IRC.*

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**Deficiency:** The brick window ledgers were improperly or inadequately sloped at some of the window penetrations.

**Information:** Proper industry installation requirements are that the ledgers slope a minimum of 15 degrees away from the house to allow the ledgers to drain completely. Some of the ledgers installed on the house actually sloped toward the house which will force water into the wall cavities. The ledgers should be removed and adequately sloped, at a minimum, new ledgers should be installed.

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**Deficiency:** The junctions of the window frames and door frames with the brick veneer were not properly sealed.

**Information:** The lack of a proper seal can allow water into the wall cavity and can allow a more ready transfer of air from the exterior of the house to the interior of the house. All of the wall openings should be properly sealed with an approved adhesive to reduce the possibility of water penetration, to restrict the access of pests and insects to the interior of the house and to limit the transference of air from the interior of the house to the exterior atmosphere.

**Deficiency:** Some of the wood fiber products siding panels on the house and garage were damaged.

**Information:** The damaged wood fiber products siding material should be replaced with new material that matches the existing structure.



■ □ □ ■ **F. Ceilings & Floors – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency:** The electrical conductors and the lighting fixture under the staircase break the required fire protection of the staircase.



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Information: Staircases are required to be fireblocked on the underside of the staircase and at the top and bottom of each flight. Fireblocking is required in these areas to slow the speed of a fire and to keep the staircase standing and usable for as long as possible in the event of a fire. This requirement is made to give the people in the upper stories of the house a chance to escape. Proper firestopping should be provided for safety.

References: R302.11 Fireblocking and R302.7 Under-stair protection.

In combustible construction, fireblocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between a top story and the roof space.

Fireblocking shall be provided in wood-frame construction in the following locations:

1. In concealed spaces of stud walls and partitions, including furred spaces and parallel rows of studs or staggered studs, as follows:

1.1. Vertically at the ceiling and floor levels.

1.2. Horizontally at intervals not exceeding 10 feet (3048 mm).

2. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.

3. In concealed spaces between stair stringers at the top and bottom of the run. Enclosed spaces under stairs shall comply with Section R302.7.

4. At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion. The material filling this annular space shall not be required to meet the ASTM E 136 requirements.

5. For the fireblocking of chimneys and fireplaces, see Section R1003.19.

6. Fireblocking of cornices of a two-family dwelling is required at the line of dwelling unit separation.

*To restrict the movement of flame and gasses to other areas of a building through concealed passages in building components such as floors, walls and stairs, fireblocking of these concealed combustible spaces is required to form a barrier between stories and between a top story and the roof space. From the Commentary to the IRC.*

R302.7 Under-stair protection.

Enclosed accessible space under stairs shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board.

*Often times the space under a stairway is used for storage, since this space is often of little use for other purposes. The code permits the use of an open space beneath a stair without the need for any additional protection. Additionally, if the space is walled off and there is no access to the area, then the code is also not concerned. If, however, the area beneath the stairway is enclosed and any type of access is provided into the space, then the walls, soffits and ceilings of the enclosed space must be protected on the enclosed side with at least 1/2-inch (12.7 mm) gypsum board. From the Commentary to the IRC.*

R602.8.1.2 Fireblocking integrity.

The integrity of all fireblocks shall be maintained.

*Piping, ducts, or other similar items that pass through firestops must be installed so that the integrity of the firestop is maintained. This may be accomplished by packing an oversized hole with an acceptable fireblocking material. From the commentary to the IRC.*

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**Deficiency: Floor slopes in excess of or different from the deflections noted in the first floor elevations were found in the second story floor framing. As shown in the drawings below the second story interior walls are not all over the first floor walls. This configuration appeared to be a cause of some of the deflections.**

Information: These slopes appeared to be related to the structural framing. Defects in the framing could include anything from improper design and/or installation, excessive spacing or spanning of the joists, improper boring or notching of joists or beams, failure to reinforce the structure for the loads imposed by mechanical equipment in the attic, use of inadequate materials, etc. As the framing was concealed by finish materials, it was not possible to determine what, if any, defects were present in the framing. In order to determine the exact cause(s) of the floor slopes, the floor framing system would have to be exposed.

There is some confusion in the building and inspecting professions concerning deflections in floor framing systems. The model building codes and the span tables issued by lumber grading agencies allow deflections in floor framing that do not exceed the ratio of one part vertical deflection in a three hundred and sixty part span. The span is the horizontal distance between supports. This ratio is equated to a one inch vertical displacement in a 360 inch span. Since 360 inches is the same as 30 feet, the ratio is often stated as a one inch deflection in a 30 foot span. As this is a ratio, it could also be stated as a one-half inch deflection in a fifteen foot span or a one-quarter inch deflection in a seven and one-half foot span.

The deflection is the amount of deformation allowed after the floor framing system is fully loaded. The floor framing system is designed to support its own load and live loads of varying amount depending on the intended use of the roof. If the loads of a bedroom are considered, the floor framing system would be designed to carry the weight of the lumber used to create the floor frame and the floor covering materials. The floor framing system would also be designed to support loads from furniture and furnishings up to a total load of 30 pound per square foot.

If we consider the loads that the bedroom floor framing system would be designed to support, assume that the bedroom is sized 10 feet by 15 feet. The square footage of the floor would be 10 feet multiplied by 15 feet which equals 150 square feet. To obtain the total, reasonable well distributed load imposed by furniture and furnishings that the floor framing system is designed to carry without exceeding the allowed deflection ratio of 1/360, multiple 150 square feet by 30 pounds per square foot which equals 4,500 pounds.

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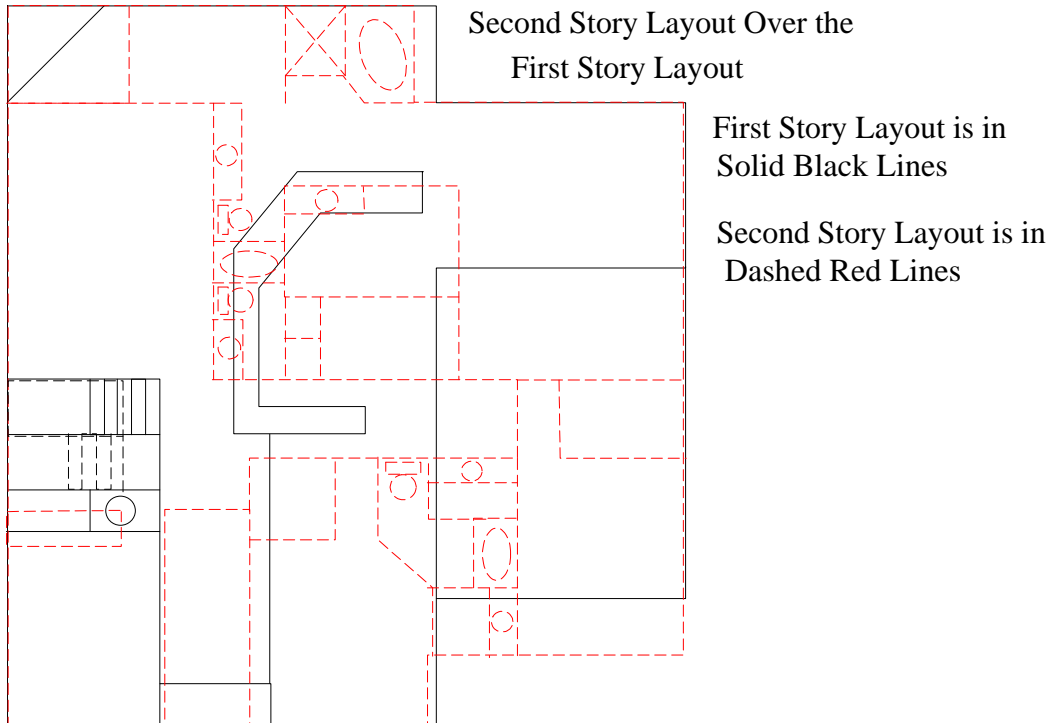
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The floor framing system is, therefore, designed to carry its own weight plus 4,500 pounds, reasonably well distributed across the surface of the floor, without exceeding the allowable deflection expressed by the ratio of one part vertical displacement over a 360 part span.

Should a floor framing system deform in excess of that ratio without having the loads imposed on the floor framing system exceed the designed minimum load for that type room, the floor framing system is deficient.

If the floor slopes are created during the construction of the house, this is indicative of poor construction practices, an inadequate design and/or the use of inadequate framing materials. Deformation of the floor framing system in excess of the allowable deformation under full design loading likely indicates a significant framing problem.

As the floor framing system of this house did not appear to have been overloaded, the presence of the excessive deformations of the floor framing systems indicates that the causes of the deformations should be determined and corrected. The floor framing system should be analyzed by a competent structural engineer who is not routinely hired or employed by the builder of the house to remove any conflict of interest concerns.



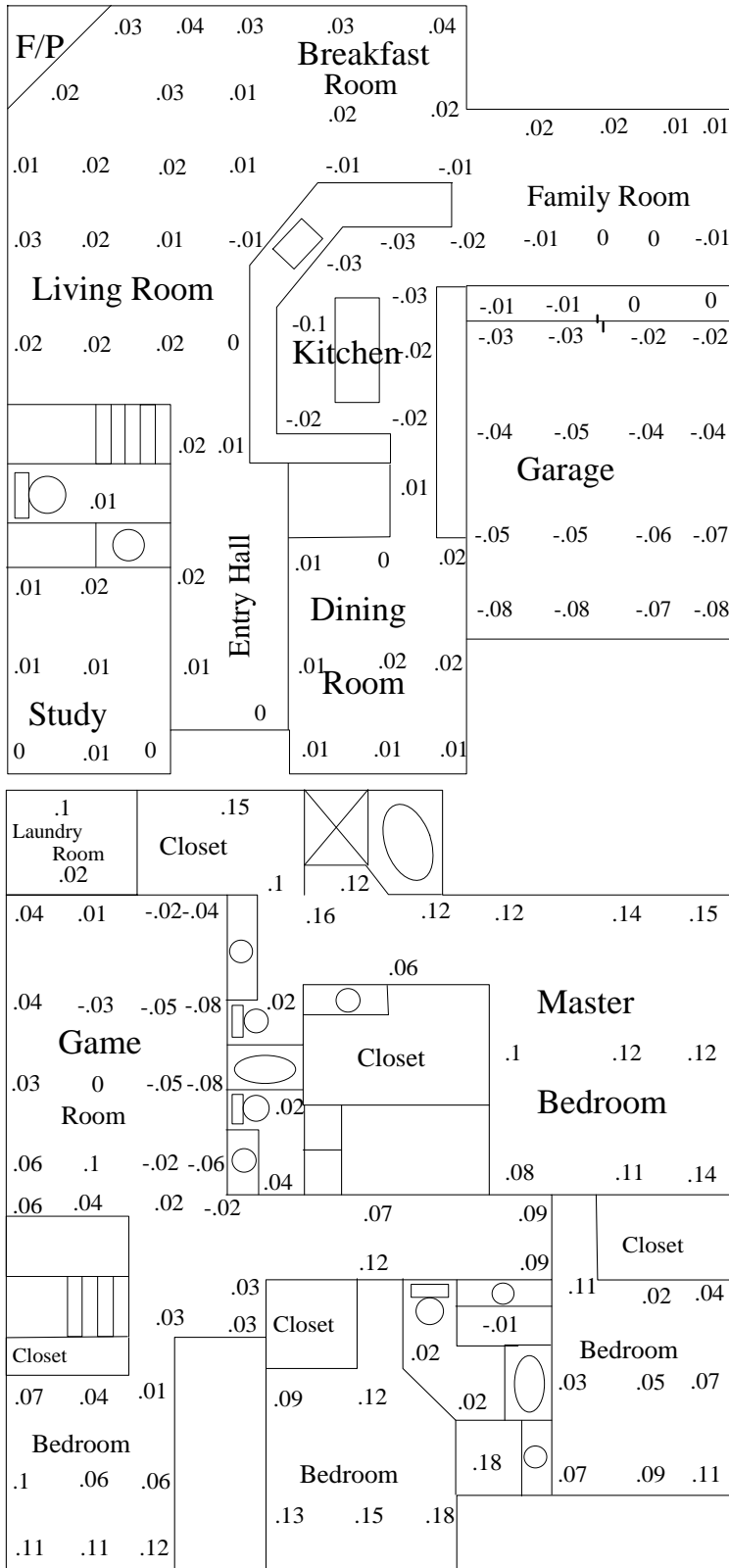
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■ □ □ ■ **G. Doors (Interior & Exterior) – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: There were double cylinder dead bolts on the exterior doors.**

Information: Keyless dead bolts are required on exterior doors for safety to allow egress without searching for a key in an emergency. When in an emergency, many people panic and loose the ability to reason. The use of a keyless deadbolt removes the necessity of a person have to think logically to locate a key when faced with an emergency situation. The keyed deadbolts should be replaced with keyless deadbolt on the interior side of the doors.

References: *311.4.4 Type of lock or latch.*

All egress doors shall be readily openable from the side from which egress is to be made without the use of a key or special knowledge or effort.

**Deficiency: The breakfast room exterior door was installed with the hinges on the exterior of the house.**

Information: Access to the house can be gained by removing the hinge pins. The door frame should be removed and properly reinstalled. It is also possible to installed locking or exterior hinges that would prevent the removal of the hinge pins or that would lock the door in the door frame if the hinge pins were removed. If this option is chosen, a plate should be installed to cover the lock throws so that the lock throws cannot be pried open.



■ □ □ ■ **H. Windows – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment,

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restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: Some of the windows were difficult to open, close and/or latch.**

Information: The windows should be adjusted to open, close and latch properly. The bedroom windows are considered emergency escapes. If the windows are difficult to operate, the occupant of the room may not be able to escape during a fire or other emergency.

■ □ □ ■ **I. Stairways (Interior & Exterior) – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: There was no continuous handrail on the staircase.**

Information: A continuous handrail is required for safety.

References: 311.5.6.2 Continuity.

*Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1 1/2 inch (38 mm) between the wall and the handrails.*

■ □ □ □ **J. Fireplace/Chimney - Comments:**

Information: There were no visible defects noted in the firebox or visible areas of the flue that appeared to require immediate repair at the time of the inspection, in my opinion.

■ □ □ ■ **K. Porches, Balconies, Decks, and Carports – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: The surface of the front porch was in contact with the masonry veneer.**

Information: Current building codes provide that the elevation of ground surfaces, sidewalks, porches, patios or driveways, etc. cannot be closer than four inches to the elevation of the surface of the foundation or the bottom of the masonry claddings of a house. Having the elevation of the porch raised so that the patio is in contact with the veneer can allow water to be trapped in or against the veneer. The elevation of the porch should be lowered as required by current building codes or another means of providing a drain opening for the wall should be installed.

References: R404.1.6 Height above finished grade.

*Concrete and masonry foundation walls shall extend above the finished grade adjacent to the foundation at all points a minimum of 4 inches (102 mm) where masonry veneer is used and a minimum of 6 inches (152 mm) elsewhere.*

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The minimum distance above adjacent grade to which the foundation must be extended provides termite protection and minimizes the chance of decay resulting from moisture migrating to the wood framing. A reduced foundation extension is permitted when masonry veneer is used.

**L. Other – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Information:** While this firm does not perform inspections on swimming pools, it was noted that the barrier systems required by City Ordinance or by your insurance provider, such as self closing and latching gates, safety fencing, door alarms, splash alarms, etc. were not provided. You should determine the items required by the City Ordinance and/or your insurance for pool safety for your protection and the safety to your family, visitors or other persons who use your property.

**II. ELECTRICAL SYSTEMS**

**A. Service Entrance and Panels – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Information:** Electrical service was provided to the house by underground conductors. The conduit protecting the conductors was continuous and was not damaged, where visible. The meter was securely attached to the structure. The grounding conductor was visible and appeared to be securely fastened to the grounding electrode.

**Deficiency: There was only one grounding electrode visible on the property.**

**Information:** Grounding requires the use of a grounding system. A second means of grounding should be installed in accordance with Sections E3507.6 and E3508 of the IRC. The IRC and the NEC require that a grounding system be installed. A grounding system, as defined by the electrical codes, means two direct grounding electrodes or a made electrode and a concrete encased electrode with access to the connection of the concrete encased electrode. Access to a concrete encased electrode or to a grounding ring does not have to be provided and may not be visible. The presence of a proper grounding electrode system should be verified or a proper grounding electrode system should be installed for safety.

References: E3507.6 Common grounding electrode.

The service grounding electrode in or at a building shall be used to ground conductor enclosures and equipment in or on that building. Two or more grounding electrodes that are effectively bonded together shall be considered as a single grounding electrode system.

*This section requires that the grounding electrode used to ground the service neutral conductor must also be used to ground all the metallic enclosures in the electrical system. With one grounding electrode used to ground all of these components, there will not be a different potential; all enclosures will be at the same zero voltage potential as the grounded service conductor. Where two or more grounding electrodes are used at the premises, they must be effectively bonded together and considered as one grounding electrode. This keeps all non-current carrying metal surfaces in the electrical system at earth potential. From the Commentary to the IRC.*

**Deficiency: A grounding conductor was connected to an exterior faucet on the house.**

**Information:** This conductor may serve as a bond on the copper water pipes but cannot be the service

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grounding system as defined by the National Electric Code. As the main water shut off valve was in the laundry room, the bonding conductor connection to the exterior faucet could not have been within five feet of where the water main pipe entered the structure. A second proper earth grounding made electrode should be installed for safety.

References: E3508.1 Grounding electrode system.

Where available on the premises at each building or structure served, electrodes specified in Sections E3508.1.1, E3508.1.2 and E3508.1.3, and any made electrodes specified in Section E3508.2, shall be bonded together to form the grounding electrode system. Interior metal water piping located more than 5 feet (1524mm) from the point of entrance to the building shall not be used as part of the grounding electrode system or as a conductor to interconnect the electrodes that are part of the grounding electrode system.



**Information:** The main breaker panel was an interior 200 Amp Square D panel board with 150 Amp main disconnects. The service entrance conductors were 2/0 aluminum conductors. The conductors to the circuits were copper. The circuits were labeled as follows:

- |   |                      |    |        |
|---|----------------------|----|--------|
| 1 | 50-240 A/C           | 13 | 20-120 |
| 2 | 40-240 Oven, Unknown | 8  | 15-120 |
| 2 | 30-240 A/C           |    |        |



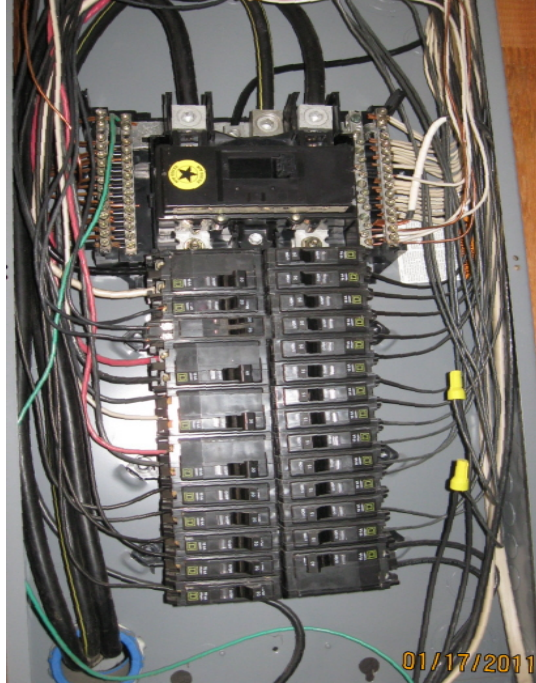
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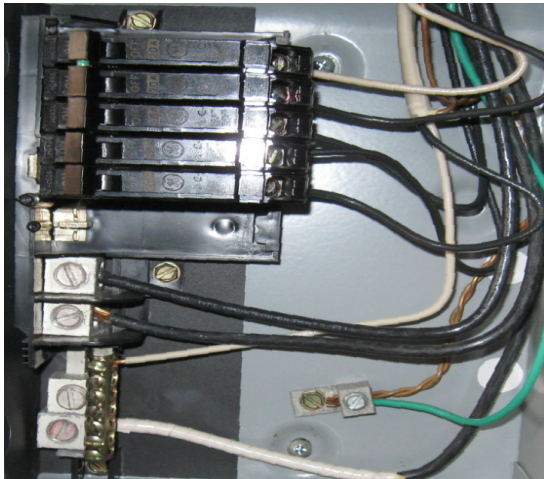
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**Information:** The sub panel board had 40 Amp main disconnects. The service entrance conductors were #8 AWG copper conductors. The conductors to the circuits were copper. The branch circuits were labeled as follows:

1 \_\_ 20-240

3 \_\_ 20-120



**Deficiency:** The circuits were not properly labeled or identified in the breaker panel.

**Information:** As the circuits were not identified, it could not be determined if the circuits were properly sized for the listed appliances. Over sizing of overcurrent protective devices on any appliance is a recognized fire hazard. Undersizing of conductors is also a fire hazard. The National Electric Code, Section 408.4, states that identifying circuits as 'bedrooms or wall outlets or light switches' is not adequate. Labeling must be specific as to which appliances are to be protected by the over current device. The circuits

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should be rated and certified by a competent electrician according to the listings of the appliances.

References: E3606.2 Panelboard circuit identification.

All circuits and circuit modifications shall be legibly identified as to purpose or use on a circuit directory located on the face or inside the door of the enclosure.

**Deficiency: The conductors in the panel were not properly color coded.**

Information: Neutral (white insulated) conductors were used as hot conductors and were not identified as hot, or ungrounded, conductors. All hot (ungrounded) conductors are required to be identified by the use of any color other than white, gray or green or bare copper. The conductors should be properly identified for safety.

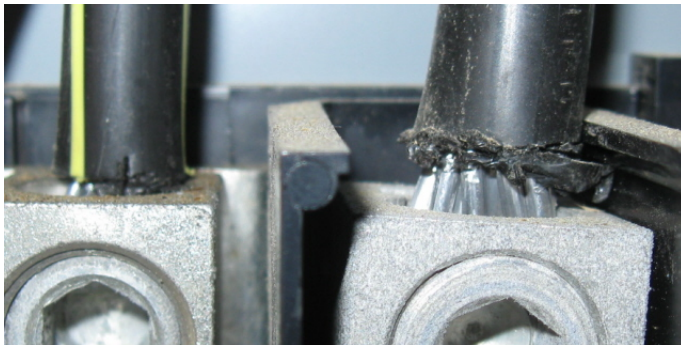
References: E3307.3 Ungrounded conductors.

Insulation on the ungrounded conductors shall be a continuous color other than white, gray or green.

**Deficiency: The aluminum service entrance current carrying conductors had not been treated with an anti-oxidizing compound.**

Information: The service entrance conductors between the meter and the breaker panel were aluminum conductors, as are almost all service conductors throughout this area. The aluminum conductors should be cleaned and treated with an anti oxidizing compound. Electricity tends to flow on the surface of a conductor and aluminum oxide is a worse conductor than aluminum. The presence of aluminum oxide increases the resistance of the conductor, which increases the heat in the conductor and forces an increase in electrical flow in order to maintain the electrical service, all of which increases electrical use and your cost for electricity. While the metals used for the connectors for the panel are compatible for use with aluminum wiring as far as thermal expansion is concerned, the possibility of galvanic action remains. The anti oxidizing mastic should be replaced as it dissipates.

References: It is very important to use an approved oxide-inhibiting compound on aluminum conductors. Where aluminum conductors are subject to moisture or even very high humidity, oxidation can occur. Oxidation of aluminum can cause a thin film or layer, which looks like a powder, on the conductor. It will result in heat build-up by impeding the current flow. From the Commentary to the IRC.



**Deficiency: Multiple grounded (neutral) conductors were connected under one screw on the bus bars.**

Information: The IRC (International Residential Code) and the National Electric Code provide that all current carrying conductors be connected to any and all electrical component by only one screw. As electricity travels on the surface of a conductor, poor contact at the connection points reduces the surface

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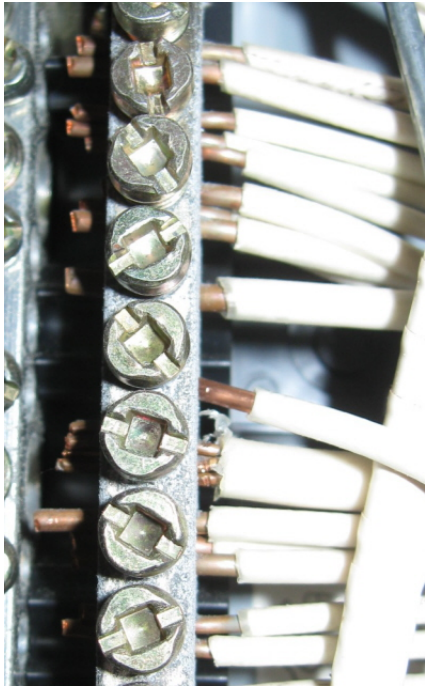
area of the contact point and can result in damage to the conductor. The grounded conductors should be separated so that only one conductor is connected to each port of the bus bars.

References: E3606.4 Grounded conductor termination & .E3306.9 Terminals.

Each grounded conductor shall terminate within the panelboard on an individual terminal that is not also used for another conductor, except that grounded conductors of circuits with parallel conductors shall be permitted to terminate on a single terminal where the terminal is identified for connection of more than one conductor.

Connection of conductors to terminal parts shall be made without damaging the conductors and shall be made by means of pressure connectors, including set-screw type, by means of splices to flexible leads, or for conductor sizes of No. 10 and smaller, by means of wire binding screws or studs and nuts having upturned lugs or the equivalent. Terminals for more than one conductor and terminals for connecting aluminum conductors shall be identified for the application.

Connections must be made without damaging the conductors. When stripping the insulation from the ends of conductors, it is easy to nick or cut into the wire. Using improper techniques or tools when stripping the conductors may damage the softer aluminum conductors. In many installations, two or more conductors are connected under one terminal since it is easy to install them and they will fit. However, terminals for connecting multiple conductors must be listed for this purpose. Most modern equipment such as panelboards has terminal strips with a sufficient number of terminals to connect all necessary circuit conductors. In some cases, it may be necessary to install additional terminal strips in order to terminate each conductor under a separate terminal. If the terminals are approved for the connection of more than one conductor, the approval will be stated in the listing information or supplied with the packaging of the equipment. (From the Commentary to the IRC).



**Deficiency: The conductors entering the panel board were bundled.**

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**Information:** Section 312.5 (C) of the National Electric Code (NEC) provides that each cable shall be secured to the cabinet. The section prohibits the installation of several cables bunched together through a knockout or chase unless specific rules are followed under the exception. Bundling of the conductors eliminates air space and restricts the diffusion of heat. The conductors entering the panel board should be separated for safety.

**References:** Section 312.5 (C) of the National Electric Code

Where cable is used, each cable shall be secured to the cabinet, cutout box or meter socket enclosure.

*The main rule of 312.5 (C) prohibits the installation of several cables bunched together and run through a knockout or chase nipple. Individual cable clamps or connectors are required to be used with only one cable per clamp or connector, unless the clamp or connector is identified for more than a single cable.*

**Deficiency:** There were an inadequate number of branch circuit and equipment grounding conductors present in the sub panel box.

**Information:** All electrical circuits require a grounding conductor. All 120 volt circuits and all 240 volt appliances that contain a 120 volt component require a grounded (neutral) conductor. When the number of grounded and grounding conductors are not equal to the number of circuits it means that the circuits are not properly created and unsafe conditions may exist. The location and proper termination of the remaining branch circuit and equipment grounding conductors should be verified prior to the termination of any due diligence investigation period. All unsafe conditions should be properly repaired.

**Deficiency:** The breakers to the air conditioning condensing units were undersized.

**Information:** The condensing units allowed 60 and 35 Amp breakers respectively maximum for safety. Under sized breakers may not be able to allow the current flow necessary to allow the unit to start. If the breakers begin to trip when the unit starts, the breaker sizes can be increased to the maximum over current protection rating of each unit safely. Many manufacturers of the breaker only guarantee their breakers to trip under a load one time. Continued tripping of the breaker may damage the breaker causing it to become a switch instead of an overcurrent protective device.

**Deficiency:** There were no arc-fault breakers installed in the panel.

**Information:** Arc-fault circuits are required for all outlets family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreations rooms, closets, hallways, or similar rooms or areas. Arc-fault devices monitor the electrical current wave. If the wave pattern changes, indicating a spark or fire, the arc-fault protective device turns the electricity off. This deprives the fire of fuel which, hopefully, extinguishes the fire. It is hoped that the deprivation of fuel will cause the fire to extinguish itself. The requirement for the installation of arc-fault protective devices began with the requirement for the use of arc fault protected outlets in the bedrooms only. This requirement was introduced with the publication of the 1999 National Electric Code (NEC). The 2008 edition of the NEC requires the use of arc fault protected circuits in the areas listed above. This information is provided to advise you that these safety devices are available should you want them installed in your home.

■ □ □ ■ **B. Branch Circuits, Connected Devices, and Fixtures**

*Type of Wiring: Copper*

*Comments:*

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

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**NOTICE:** The kitchen appliances were tested for bonding and/or grounding. Continuity to ground was obtained on all the kitchen appliances indicating that the appliances were bonded and/or grounded. Bonding and grounding of the kitchen appliances is a safety requirement.

**Deficiency:** Extension cords were used as permanent conductors in the garage.

Information: Extension cords are not intended for permanent use and are not sized or insulated for such use. Prolonged and permanent use of extension cords is considered to be a fire hazard. The extension cords should be replaced with permanent wiring.



**Deficiency:** There was inadequate clearance in front of the air conditioning mechanic's disconnects at the air conditioning condensing units.

Information: All energized electrical equipment and panelboards are required to have unobstructed access 36 inches deep in front of the equipment and 30 inches wide, at a minimum. Proper access for the mechanic's disconnects should be provided according to Section E3305.2 of the IRC and Section 110.26(A) of the National Electric Code.

References: *From the National Electric Code*

*The intent of 110.26(A) is to provide enough space for personnel to perform any of the operations listed without jeopardizing worker safety. Examples of such equipment include panelboards, switches, circuit breakers, controllers and controls on heating and air conditioning equipment. It is important to understand that the word examination includes such tasks as checking for voltage with a portable voltmeter. 110.26(A) NEC.*

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**Deficiency:** The electrical bonding system installed in the house did not appear to include all required components.

Information: All metal piping systems, including each section of the natural gas distribution pipes are required to be bonded to the breaker panel or grounding electrode to equalize the differing electrical potentials on all elements that are capable of carrying electricity. These systems also include the telecommunications systems, cable systems and satellite systems, etc. Without proper bonding, a person or a flammable item could be the medium through which the potentials are equalized, which could result in a shock, electrocution and/or fire. Proper bonding should be installed for safety.

References: *E3509.6 Metal water piping bonding.*

The interior metal water piping system shall be bonded to the service equipment enclosure, the grounded conductor at the service, the grounding electrode conductor where of sufficient size, or to the one or more grounding electrodes used. The bonding jumper shall be sized in accordance with Table E3503.1. The points of attachment of the bonding jumper(s) shall be accessible.

*E3509.7 Bonding other metal piping.*

Where installed in or attached to a building or structure, metal piping systems, including gas piping, capable of becoming energized shall be bonded to the service equipment enclosure, the grounded conductor at the service, the grounding electrode conductor where of sufficient size, or to the one or more grounding electrodes used. The bonding jumper shall be sized in accordance with Table E3808.12 using the rating of the circuit capable of energizing the piping. The equipment grounding conductor for the circuit that is capable of energizing the piping shall be permitted to serve as the bonding means. The points of attachment of the bonding jumper(s) shall be accessible.

*Communications systems, cable TV, and similar systems must be grounded. If the enclosures, raceways, and non-current carrying metal surfaces of these other systems are not bonded to the premises wiring system, they could operate at a difference in potential. Intersystem bonding is required to reduce the shock hazard and minimize the possible fire danger. Where the service equipment cabinet and meter base are flush with a brick or stucco wall, the raceways are concealed within the wall, the grounding electrode conductor is not accessible, and the ground rod has been buried, there is nothing available to which to bond the metallic jacket of the communications cable. If the installer drives a separate ground rod to bond the cable TV cable shield and boxes to, it would be a code violation if not bonded to the service electrode system. An accessible means external to the service equipment enclosures must be provided. If the underground service lateral is run in metal conduit installed on the surface of the wall from the ground up,*

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or if the overhead service riser is external, which it most often is, or if the grounding electrode conductor is run to a ground rod along the outside wall, these would be accessible means for intersystem bonding. In some cases, especially where the service equipment is flush with the wall, it may be necessary to bond a size 6 AWG bare copper conductor to the enclosure and leave several inches of the conductor outside the equipment so that it is accessible for the connection of bonding jumpers of other systems. From the Commentary to the IRC.



**Deficiency:** Some of the lighting fixtures such as the lighting fixtures in the master bathroom, upstairs and lighting fixtures on the exterior of the house, etc. did not operate.

Information: This may be caused by burned out light bulbs however; the inspector could not make this determination. The fixtures should be made operable.

**Deficiency:** The staircase treads and landings did not appear to be adequately illuminated.

Information: Current and past building codes require that illumination be provided to the staircase treads and landings for safety. Proper illumination should be installed to reduce the possibility of the user tripping.

References: 303.6 Stairway illumination.

All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads. Interior stairways shall be provided with an artificial light source located in the immediate vicinity of each landing of the stairway. For interior stairs the artificial light sources shall be capable of illuminating treads and landings to levels not less than 1 foot-candles (11 lux) measured at the center of treads and landings. Exterior stairways shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stairway. Exterior stairways providing access to a basement from the outside grade level shall be provided with an artificial light source located in the immediate vicinity of the bottom landing of the stairway.

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**Deficiency:** The electrical wall outlet for the master bathroom east side lavatory was improperly located too far away from the lavatory.

Information: The National Electric Code requires that an electrical wall outlet be installed within 36 inches of the outside edge of each lavatory. The electrical wall outlet should be relocated or a new outlet should be installed near the lavatory.

**Deficiency:** The electrical outlets under the kitchen sink were installed in the face-up position.

Information: The National Electric Code and the IRC prohibit the installation of electrical receptacles in the face up position on kitchen and bathroom counter tops to prevent debris and water from entering the receptacle. While the installation of the receptacle in the face-up position under the kitchen sink may not violate the exact provisions of the codes, it violates the intent of the codes in my opinion. It is my opinion that the receptacle should be moved to the side wall to reduce the possibility of water or debris entering the receptacle.

E3801.4.5 Receptacle outlet location.

Receptacle outlets shall be located not more than 20 inches (508 mm) above the countertop. Receptacle outlets shall not be installed in a face-up position in the work surfaces or countertops. Receptacle outlets rendered not readily accessible by appliances fastened in place or appliances occupying dedicated space shall not be considered as these required outlets.



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**NOTICE:** There was an electrical outlet installed on the kitchen island as required by the National Electric Code (NEC) and the IRC.

Information: The purpose of the outlet is so that electrical appliances on the island can be connected to the electrical system without the use of an extension cord. There have been numerous accidents involving children pulling on electrical cords and pulling cooking devices containing very hot or boiling substances onto themselves. Just because there is an electrical outlet located on the island does not remove the hazard of a child pulling on an electrical cord. When counter top cooking devices are used on the island or on any counter top, you should be aware of the location of the electrical cord and any hazard this may present to a child. You may want to tape the electrical cord to the countertop to reduce the chances of an injury.

**Deficiency:** Child proof covers were installed in most of the electrical wall outlets.

Information: These outlets were not inspected. The child proof covers should be removed and the outlets should be properly inspected prior to the closing on the house.

**Notice:** The National Electric Code (NEC) has required the installation of Arc Fault Circuit Interrupting (AFCI) Breakers on 120 volt circuits since the late 1990's. AFCI breakers were originally required on all bedroom receptacles. Bedroom receptacles include lighting fixtures, ceiling fans and smoke alarms along with electrical wall outlets. Under current codes, AFCIs are required on all 120 volt circuits that do not permanently supply an appliance or on electrical circuits that have Ground Fault Circuit Interrupting (GFCI) protection. The purpose of an AFCI is to turn the electricity off on an electrical circuit when a spark, arc or electrical fire is found in an electrical circuit. The spark or arc is noted by a change in the electrical current flow. AFCIs commonly trip when an appliance is connected to the circuit as a spark often occurs when the appliance is plugged into the wall outlet. Nuisance tripping is a random occurrence that is not discoverable in the course of a one-time visual inspection of a property. If excessive nuisance tripping of an AFCI device is noted please contact a licensed, competent electrician. During an inspection of an occupied house, AFCIs cannot not be tested due to the possibility of damaging electrical appliances that are connected to an AFCI breaker. As there are no completely accurate testing devices available, AFCIs are tested in unoccupied houses by pressing the "test" button on the AFCI breaker only.

**Notice:** The inter-connectivity of the smoke alarms could not be verified.

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Information: The smoke alarms must be inter-connected so that when one alarm is activated, all alarms sound. The inter-connectivity should be verified or the smoke alarms must be inter-connected prior to the expiration of any due diligence investigation period limitation.

### III.HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS

■ □ □ ■

#### A. Heating Equipment

*Type of System: Central Forced*

*Energy Source: Natural Gas*

*Comments:*

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: The types of furnace installed do not lend themselves to a visual inspection of the heat exchangers.**

Information: The seams and body of the heat exchanger is concealed from view. In order to inspect the heat exchangers, the units must be disassembled, which is beyond the scope of this inspection. There is no visual test to determine the condition of these heat exchangers. A competent HVAC contractor should be contacted to make an inspection of the heat exchangers prior to expiration of any due diligence investigation period.

**NOTE: The units were older model units that appeared to have reached the end of their useful economic life, in my opinion. Extended performance of the units should not be expected. Consideration should be given to replacing the units.**

■ □ □ □

#### B. Cooling Equipment

*Type of System: Central Split*

*Comments: Electricity*

EAST CONDENSING UNIT MAKE: Rheem MODEL No. RAMB060JBZ SERIAL No. 8 MINIMUM CIRCUIT AMPACITY: 38 MAXIMUM OVERCURRENT PROTECTION: 60 R.L.A.: 28.9

WEST CONDENSING UNIT MAKE: Rheem MODEL No. RAMB036JBZ SERIAL No. 6 MINIMUM CIRCUIT AMPACITY: 23 MAXIMUM OVERCURRENT PROTECTION: 35 R.L.A.: 16

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: The refrigerant pipes were not fully insulated.**

Information: This can cause damage from condensate being created on the exterior of the pipe. It also reduces the efficiency of the unit as some of the cooling capacity is dissipated into the atmosphere.

**Deficiency: The condensing coil units were dirty.**

Information: The coils should be cleaned. The fins should be straightened. The dirt should be removed from the coil. Restrictions in the flow of air through the coil and the fins prevent the compressor from properly discharging the heat from the house into the atmosphere. Inadequate return air also reduces the efficiency of the unit and raises the amperage use of the unit. This increases the cost of operating the system.

I=Inspected

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**Deficiency:** Water stains were noted in the safety pan of the east evaporator coil in the attic indicating that the evaporator coil's primary drain pipe had been, and may still be, blocked.

**Information:** The evaporator coil should be cleaned, checked, serviced and certified as being in good condition. Often HVAC technicians simply open the primary drain pipe without cleaning the evaporator coil. Simply opening the drain pipe without cleaning the coil will cause the drain to become block again in the near future.



**Deficiency:** There was evidence that the safety pan(s) had over flown in the past.

**Information:** This may indicate that the safety pan drain pipe is obstructed or that a section(s) of the safety pan drain pipe is higher in elevation than the top edge of the safety pan. The safety pan drain pipe should be cleared of all obstructions and the proper routing of the drain pipe should be verified prior to the expiration of any due diligence investigation period.

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**Deficiency:** There were stains from condensation on the exterior of the east evaporator coil and plenum.

**Information:** Condensation on the exterior of the coil casing can cause the casing to rust and damage which would render the coil inefficient if not useless. The cause(s) of the condensation should be determined and eliminated.



**Deficiency:** The evaporator coils were not accessible.

**Information:** The evaporator coils are required to be accessible for inspection and servicing. As there was no means of access provided for the inspection or servicing of the coils, the coils could not be inspected.

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The condition of the evaporator coils is specifically excluded from the inspection and from this report. The condition of the coils should be determined prior to the expiration of any due diligence investigation period.

References: M1401.2 Access.

Heating and cooling equipment shall be located with respect to building construction and other equipment to permit maintenance, servicing and replacement. Clearances shall be maintained to permit cleaning of heating and cooling surfaces; replacement of filters, blowers, motors, controls and vent connections; lubrication of moving parts; and adjustments.

*Because mechanical equipment and appliances require routine maintenance, repairs and possible replacement, access is required. Additionally, access recommendations or requirements are usually stated in the manufacturer's installation instructions. As a result, the provisions stated here are intended to supplement the manufacturer's installation instructions. The intent is that clearances be sufficient to permit cleaning of the heating and cooling surfaces and replacement of the filters, blowers, motors and control and vent connections. Section M1301.5 contains similar requirements. From the Commentary to the IRC.*

**Deficiency: The air conditioning equipment was comprised of older equipment that may be reaching the end of its economic life expectancy according to the labels on the condensing units.**

Information: You should anticipate the replacement of the equipment in the near future in my opinion.

■ □ □ ■      **C. Duct System, Chases, and Vents – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: The temperature differences between the various rooms exceeded the four degree variation limit and the relative humidity levels were too high. The air volume into the rooms indicate that the system cannot currently be balanced to provide uniform cooling comfort**

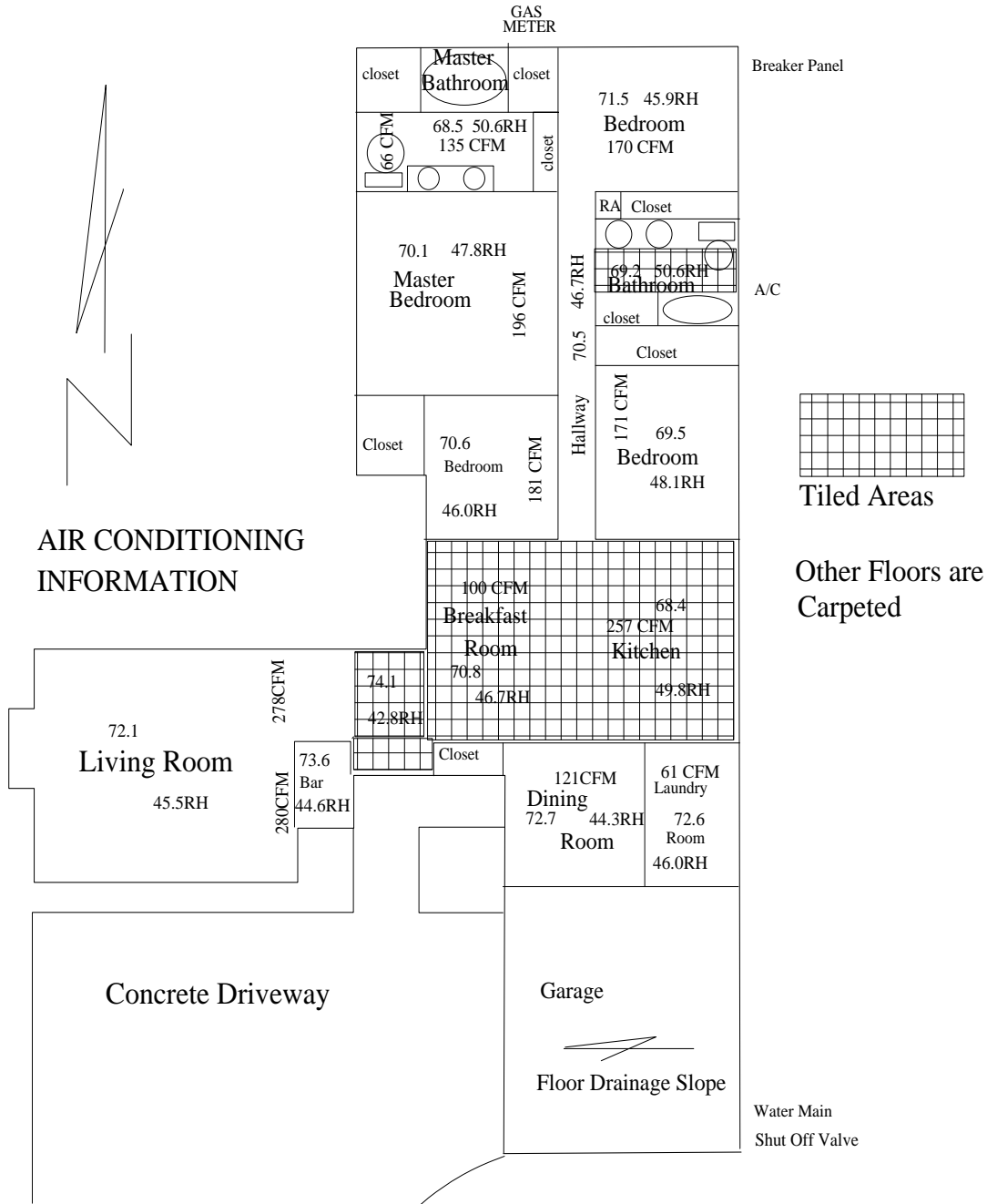
Information: The following temperature and humidity readings were noted. The thermostat in the house was set at 71 degrees. There is no reason to assume that the thermostat and the meter used to obtain these measurements were calibrated to each other. After the unit had been in continuous operation for at least 2 hours and 10 minutes the following measurements were taken. The measurements show that the temperatures were not uniform from room to room and that the variations exceeded the 4 degree limitation generally allowed. The relative humidity levels were too high in areas of the house considering the exterior relative humidity. The systems should be repaired and adjusted to provide proper air circulation, proper volumes of air flow, uniform room temperatures, lower humidity and cooling comfort. As shown, there was only 15 CFM (cubic feet per minute) difference in air flow between the master bedroom and the adjoining southwest bedroom. Yet the volume of the master bedroom is approximately 2127 cubic feet and the volume of the southwest bedroom was 1000 cubic feet. It would take approximately 11 minutes to completely change the air in the master bedroom. It would take approximately half that time to completely change the air in the southwest bedroom

	TEMPERATURE	RELATIVE HUMIDITY	VOLUME (cfm)
Living Room	72.1	45.5	280 & 278
Bar	73.6	44.6	no register
Entry Hall	74.1*	42.8	no register
Dining Room	72.7	44.3	121
Breakfast Room	70.8	46.7	100
Kitchen	68.4*	49.8*	257
Laundry Room	72.6	46.0	61

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Southwest Bedroom	70.6	46.0	181
Hallway	70.5	46.7	no register
Southeast Bedroom	69.5	48.1*	171
Hall Bathroom	69.2	50.6*	76 & 73
Northeast Bedroom	71.5	45.9	170
Master Bedroom	70.1	47.8	196
Master Bathroom	68.5	50.6*	135 & 66
Exterior Readings at end of test	91.3	43.6	no register



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**Deficiency: Pinched and misshapen flexible ducts were noted throughout the attic.**

Information: It is well known that reducing or changing the shape of a pipe or channel causes turbulence which increases the pressure in the pipe or channel but reduces flow through the pipe, a phenomenon that you may have used in pinching a garden hose to reduce or eliminate water flow from the hose. For some reason, HVAC contractors contend that this well known and documented fact does not occur in flexible air ducts. It does. The ducts should be properly aligned and supported. The turns in the ducts should be gradual so that the duct is bent and distorted as little as possible. This will help increase the volume of air flowing into the house and may relieve the pressures on the air conditioning equipment. The temperature and humidity levels should be consistent throughout each story of the house.

References: Typical Manufacturer's Installation Instructions

Flexible Air Duct installation vs. Flexible Connector installation: There are distinct differences in the use and limitations between "air duct" and "connector," as defined by "Flexible Duct Performance & Installation Standards," Third Edition, published by the Air Diffusion Council. In accordance with NFPA 90A and 90B Standards, national building codes, and local building codes, there are specific limitations on the use and installation of these items.

Particular attention must be paid to the limitation for Connector (Anco System 3100). In all cases, the most stringent of codes must be met. The U.L. label for air duct is rectangular in shape; whereas, the U.L. label for Connector is round. This allows easy differentiation between them. For example, connector CANNOT be used in lengths exceeding 14 lineal feet as per NFPA standards. Avoid installations where exposure to direct sunlight can occur. Prolonged exposure to sunlight could cause degradation to the vapor barrier. Install duct fully extended, do NOT install in the compressed state or use excess lengths. This will noticeably increase friction losses. If suspended, product shall be supported at no less than 4' intervals by hanger, saddle, or ceiling joist or other commonly used support of no less than 1-1/2" width at contact points with maximum permissible sag of 1/2" per lineal foot of spacing between supports.

Avoid bending ducts across sharp corners or incidental contact with metal fixtures, pipes or conduits. Radius at center line of bend shall NOT be less than one duct diameter.

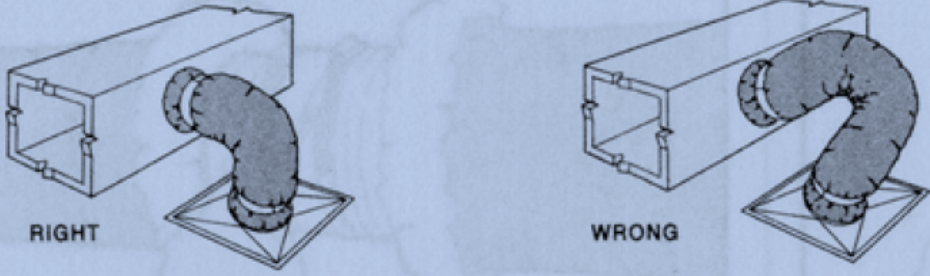
**B. GENERAL**

1. The routing and length of flexible duct, the number of degrees of each bend and the amount of sag allowed between support joints will have serious effects on system performance due to the increased resistance each introduces. Use the minimum length of flexible duct to make connections. It is not recommended that excess lengths of ducts be installed to allow for possible future relocations of air terminal devices.
2. This product is for indoor use only. Do not install product where exposure to direct sunlight can occur. Prolonged exposure to sunlight may cause degradation of vapor barrier.
3. The inner core may degrade if the duct is positioned near a bio-treatment lamp (UV emitter) installed within the HVAC system
4. Terminal devices shall be supported independently of the flexible duct.
5. Repair torn or damaged vapor barrier/jacket with duct tape listed and labeled to Standard UL 181B. If internal core is penetrated, replace flexible duct or treat as a connection.


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### C. INSTALLATION

1. Install duct fully extended, do not install in the compressed state or use excess lengths. This will noticeably increase friction losses.



2. Avoid bending ducts across sharp corners or incidental contact with metal fixtures, pipes or conduits. Radius at center line shall not be less than one duct diameter.



*Typical Flexible Duct Manufacturer's Installation Instructions.*



**Deficiency:** The conditioned air distribution systems flexible ducts rested on each other in some areas.



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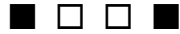
NP=Not Present

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Information: Flexible ducts are not designed to support the weight of another duct. One duct resting on top of another duct can also create zones where condensation can occur. The ducts should be separated, made as straight and tight as possible and the ducts should be properly supported.

#### IV. PLUMBING SYSTEM



##### A. Water Supply System and Fixtures

*Location of water meter: on the street right of way*

*Location of main water supply valve: on the north exterior wall of the garage*

*Static water pressure reading: 68 psi*

*Comments:*

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: The finish on the upstairs bathtub was damaged.**

Information: The finish should be restored to prevent deterioration of the bathtub.

**Deficiency: Some of the PVC sewer cleanout pipes, supply pipes, drain pipes and/or electrical conduits on the exterior of the house were exposed to the sunlight.**

Information: PVC pipe is broken down by the ultra violet rays of the sun. The PVC pipes must be painted with a UV resistant paint to protect the PVC from degradation by the ultra violet rays of the sun. Any deteriorated or brittle pipes should be replaced.

**Deficiency: There were no sediment trap or “dirty leg” installed on the natural gas distribution pipes prior to the connections to the water heater.**

Information: Sediment traps are required to collect debris in the natural gas. Debris can cause gas valves to stay open which will keep the gas flowing to the burners. The continual operation of the burners can cause the unit(s) to catch fire. Proper sediment traps should be installed where required for safety.

References: *G2419.4 (408.4) Sediment trap.*

Where a sediment trap is not incorporated as part of the gas utilization equipment, a sediment trap shall be installed downstream of the equipment shut-off valve as close to the inlet of the equipment as practical. The sediment trap shall be either a tee fitting with a capped nipple in the bottom opening of the run of the tee or other device approved as an effective sediment trap. Illuminating appliances, ranges, clothes dryers and outdoor grills need not be so equipped.

Sediment traps are designed to cause the gas flow to change direction 90 degrees at the sediment collection point, thus causing the solid or liquid contaminants to drop out of the gas flow. See Commentary Figure G2419.4(1).

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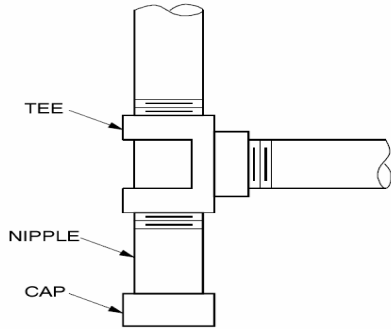


Figure G2419.4(1)  
SEDIMENT TRAP



**Deficiency:** The natural gas pipe supply pipe penetration through the brick veneer is required to be sleeved so that no friction between the brick veneer and the gas pipe can develop and so that corrosives from the brick veneer cannot attack the gas pipe.

**Information:** Friction between the brick veneer and the pipe can cause the pipe to be damaged. The penetration of the gas pipe through the brick veneer should be sleeved for safety.

**References:** G2415.7 (404.7) Above-ground piping outdoors.

All piping installed outdoors shall be elevated not less than 3 1/2 inches (152 mm) above ground and where installed across roof surfaces, shall be elevated not less than 3 1/2 inches (152 mm) above the roof surface. Piping installed above ground, outdoors, and installed across the surface of roofs shall be securely supported and located where it will be protected from physical damage. Where passing through an outside wall, the piping shall also be protected against corrosion by coating or wrapping with an inert material. Where piping is encased in a protective pipe sleeve, the annular space between the piping and the sleeve shall be sealed.

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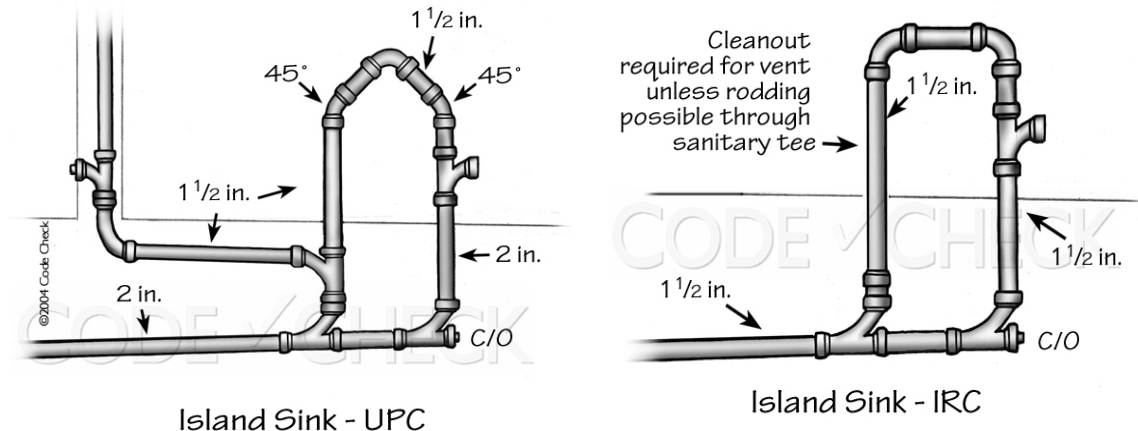
■ □ □ ■ **B. Drains, Wastes, and Vents – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**NOTICE:** When a house is newly built or remodeled, or when a house has been vacated from even for a short period of time, it is not unusual for the plumbing system to back up when the new owner occupies the structure. This is due to the fact that the contractors building or remodeling the house use the plumbing system as a method of cleaning everything from paint to putty to anything else you can think of. Solids in the pipes tend to congeal as water drains from the pipes through lack of use and the solids can form barriers in the pipes. Before occupying the structure, you should repeatedly fill all plumbing fixture in an attempt to insure that the drains will operate once you and your family have moved into the property.

**Deficiency:** The kitchen sink island drain appeared to be improperly vented.

**Information:** The purpose of a trap is to create a water seal so that sewer gases do not enter the structure. The purpose of a vent is to allow outside air into the drain system so that a vacuum does not form preventing drainage or forcing conditioned air from the interior of the house to be used for drainage. Improper venting can allow the drain trap to be siphoned dry and can allow sewer gas, which contains methane, into the house. The lack of proper venting can cause the drainage of the fixture to be very loud. The routing and height of the air vent chamber should be verified.



Courtesy of Code Check

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**Deficiency:** Some of the tub drain traps and supply systems were not accessible and were not inspected.

Information: An opening is required to be made behind the tub to allow access to the drain pipes and supply system for inspection and service. Without the opening, there is no possibility of determining the condition or the integrity of the tub plumbing. The tub drain systems and the parts, components and systems in the tub enclosure could not be inspected and are specifically excluded from the inspection and from this report.

References: *IRC Section 3003.3.6*

Slip joints cannot be concealed and are limited to those connections that occur between a fixture waste outlet and its connection to the fixture drain, including the trap adapter on the trap outlet arm. In locations where a slip joint connection would be concealed, an access panel must be provided so that the connection can be serviced. This would include tub waste and overflow connections. See the commentary for Section P2704.

**Deficiency:** Water stood on the floor of the master bathroom shower stall.

Information: The unit was not properly installed as the stall did not drain completely. The base of the shower stall should be removed and the base rebuilt and sloped to allow the shower floor to drain completely.

■ □ □ ■ **C. Water Heating Equipment**

*Energy Source: Natural Gas*

*Capacity: 40 Gallons*

*Comments:*

MAKE: Bradford White MODEL No. MI50 SERIAL No. W

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency:** The temperature and pressure relief valve was corroded and old.

Information: An attempt was made to operate the device and the valve would not open under moderate pressure. The temperature and pressure relief valve is a safety device. Should the burner valve remain open, the temperature of the water in the system would continue to increase however; the water could not boil as there would be no room to allow the water to turn to steam. When a water valve is opened, the water would

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turn instantly into steam if the temperature of the water is above 212 degrees Fahrenheit. This action would cause the tank to explode. The temperature and pressure relief valve is required to be operated periodically to keep the valve from corroding. As the valve was not operable, the valve should be replaced for safety.

**Deficiency: The tank was damaged.**

Information: Dents were noted on the exterior of the tank. The interior lining of a water heater is usually glass. Rough handling of the tank normally causes the glass to crack. While the unit may not actively leak, the life expectancy of the unit may have been decreased by the damage.

■ □ □ ■ **D. Hydro-Massage Therapy Equipment – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: The pump was not accessible.**

Information: An access port is required to be left in front of the pump for servicing or replacement. Access to the pump and motor must be provided per Sections P2720.1 and E4109.3 of the IRC. The parts, components and systems in the tub enclosure could not be inspected and are specifically excluded from the inspection and from this report.

References: P2720.1 Access panel.

A door or panel of sufficient size shall be installed to provide access to the pump for repair and/or replacement.

E4109.3 Accessibility.

Hydro massage bathtub electrical equipment shall be accessible without damaging the building structure or building finish.

E4109.3 Accessibility. Hydromassage bathtub electrical equipment shall be accessible without damaging the building structure or building finish.

*The equipment, usually at the base of the hydromassage bathtub, must be accessible. This access is usually provided through an access panel. The cover or door must not be permanently sealed by tile, etc. From the Commentary to the IRC.*

**NOTICE:** The Ground Fault Circuit Interrupting (GFCI) device that protects the user of the hydromassage bathtub was located in the clothes closet adjacent to the bathroom.

Information: Should the hydromassage bathtub not operate, you should see if the GFCI has tripped. If the GFCI is tripped, there may be an electrical hazard that may cause a shock or electrocution to the user of the bathtub. If the GFCI is tripped, an electrician should be consulted to determine the presence of any electrical defect.

**V. APPLIANCES**

■ □ □ ■ **A Dishwasher – Comments:**

MAKE: Whirlpool MODEL No. KUDS SERIAL No. FY

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

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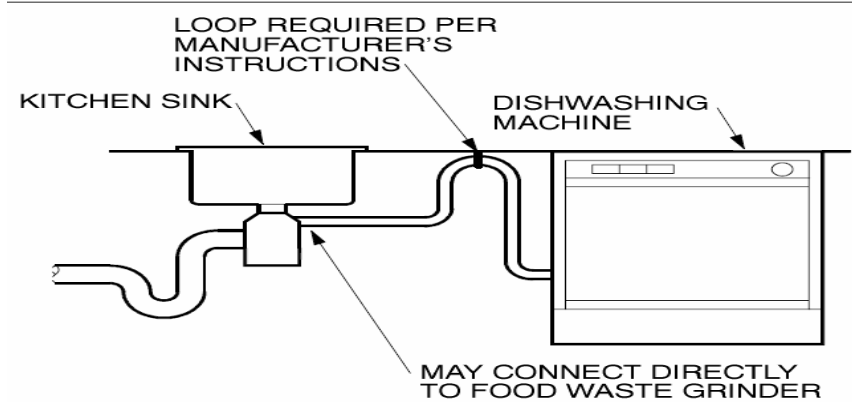
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**Deficiency: There was an inadequate anti siphon loop installed in the drain pipe.**

Information: An air gap or anti siphon loop is used to prevent backflow of contaminated water and bacteria from the disposer or plumbing drain back into the dishwasher. Many models come with backflow valves, but the anti siphon loop or mechanical air gap is still required. An anti siphon loop is created by forming an upside down "U" in the drain hose. The top of the "U" should be against the underside of the counter top. The hose is tied in place, usually to the underside of the sink or to the faucet supply pipes.



**Notice: The toggle switch controlling the dishwasher was not identified.**

Information: All electrical control devices are required to be identified unless the purpose of the control device is clear. The toggle switch should be labeled to prevent a repairman from being called when the dishwasher is not operating and the switch is simply turned off.

■ □ □ □ **B. Food Waste Disposer – Comments:**  
MAKE: Not Visible MODEL No. Not Visible SERIAL No. Not Visible

Information: There were no visible defects noted in the operation of the disposer that appeared to require immediate repair at the time of the inspection, in my opinion.

■ □ □ ■ **C. Range Exhaust Vent – Comments:**  
MAKE: Nutone MODEL No. 5 SERIAL No. 1  
Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: One of the lighting fixtures did not operate.**

Information: It could not be determined if the failure of the lighting fixture to operate was the result of a burned out bulb. The fixture should be made operable.

■ □ □ □ **D. Ranges, Cooktops, and Ovens – Comments:**  
RANGE MAKE: Kitchenaid MODEL No. Not Visible SERIAL No. Not Visible ENERGY SOURCE: Natural Gas

Information: There were no visible defects noted in the operation of the range that appeared to require immediate repair at the time of the inspection, in my opinion.

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OVEN MAKE: Kitchenaid MODEL No. KEB SERIAL No. D kW RATING: 8.9

**Information:** The oven was operated to test the calibration of the thermostat. The thermostat was found to be calibrated within the 25 degree variance allowed for temperature settings. There were no visible defects noted in the operation of the oven that appeared to require immediate repair at the time of the inspection, in my opinion.

**E. Microwave Oven – Comments:**

MAKE: Kitchenaid MODEL No. KBM SERIAL No. XN

**Information:** There were no visible defects noted in the operation of the microwave oven that appeared to require immediate repair at the time of the inspection, in my opinion.

**F. Trash Compactor – Comments:**

**G. Mechanical Exhaust Vents and Bathroom Heaters – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: The master bathroom and upstairs bathroom exhaust fans were out of balance and noisy.**

**Information:** The fans should be cleaned and serviced or the fans should be replaced.

**H. Garage Door Operator(s) – Comments:**

Items noted during the visual inspection that were deemed deficient, are in need of repair, adjustment, restoration, that require comment, continuation of the due diligence process and/or servicing or items noted for information include but are not limited to:

**Deficiency: The manual locking mechanism on the garage doors should be removed or disabled.**

**Information:** The manual locking mechanism should be removed or disabled as required by the manufacturer to prevent accidental damage to the door that can occur if the door operator is used when the manual lock is engaged.

**I. Doorbell and Chimes – Comments:**

**Information:** There were no visible defects noted in the doorbell that appeared to require immediate repair at the time of the inspection, in my opinion.

**J. Dryer Vents – Comments:**

**Information:** There were no visible defects noted in the visible dryer vent system that appeared to require immediate repair at the time of the inspection, in my opinion.

**K. Ice Maker – Comments:**

**Information:** There were no visible defects noted in the operation of the ice maker that appeared to require immediate repair at the time of the inspection, in my opinion.

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■    L. Kitchen Wine Chiller – *Comments:*

**Information:** There were no visible defects noted in the operation of the wine chiller that appeared to require immediate repair at the time of the inspection, in my opinion.

## TEXAS REAL ESTATE CONSUMER NOTICE CONCERNING HAZARDS OR REPAIRS

Each year, Texans sustain property damage and are injured by accidents in the home. While some accidents may not be avoidable, many other accidents, injuries, and deaths may be avoided through the identification and repair of certain hazardous conditions. Examples of such hazards include:

- improperly installed or missing ground fault circuit protection (GFCI) devices for electrical receptacles in garages, bathrooms, kitchens, and exterior areas
- improperly installed or missing arc fault protection (AFCI) devices for electrical receptacles in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreations rooms, closets, hallways, or similar rooms or areas
- ordinary glass in locations where modern construction techniques call for safety glass
- the lack of fire safety features such as smoke alarms, fire-rated doors in certain locations, and functional emergency escape and rescue openings in bedrooms
- excessive spacing between balusters on stairways and porches
- improperly installed appliances
- improperly installed or defective safety devices
- lack of electrical bonding and grounding

To ensure that consumers are informed of hazards such as these, the Texas Real Estate Commission (TREC) has adopted Standards of Practice requiring licensed inspectors to report these conditions as “Deficient” when performing an inspection for a buyer or seller, if they can be reasonably determined.

These conditions may not have violated building codes or common practices at the time of the construction of the home, or they may have been “grandfathered” because they were present prior to the adoption of codes prohibiting such conditions. While the TREC Standards of Practice do not require inspectors to perform a code compliance inspection, TREC considers the potential for injury or property loss from the hazards addressed in the Standards of Practice to be significant enough to warrant this notice.

Contract forms developed by TREC for use by its real estate licensees also inform the buyer of the right to have the home inspected and can provide an option clause permitting the buyer to terminate the contract within a specified time. Neither the Standards of Practice nor the TREC contract forms require a seller to remedy conditions revealed by an inspection. The decision to correct a hazard or any



Report Identification: 123 ABC Street

**I=Inspected**

**NI=Not Inspected**

**NP=Not Present**

**D= Deficiency**

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deficiency identified in an inspection report is left to the parties to the contract for the sale or purchase of the home.