



Inspected for:
Ford Prefect
Arthur Dent
3316 Golgafrincham Dr.
Magrathea, CA



Ford Prefect
Arthur Dent

Re: 3316 Golgafrincham Dr.
Magrathea, CA

Dear Ford & Arthur

As requested, a visual inspection of the above referenced property was conducted on . As noted in the Inspection Agreement, this inspection report documents the visually inspected conditions of the property at the time of the inspection. Please take time to review limitations contained in the Inspection Agreement.

As a home inspection is essentially a negative process, I focus on problematic conditions that need attention and generally do not make positive comments. Consequently, the inspection report tends to be somewhat alarming. I advise you to obtain competitive estimates from licensed and qualified contractors for correction of any items noted in the report. Also, please be aware that failure to correct any preexisting conditions noted in this report is likely to adversely affect home warranty coverage. The home warranty policy should be thoroughly reviewed should you choose to purchase one.

Thank you for choosing me to perform your home inspection. If you have any questions regarding the inspection report or the conditions noted, the best way to contact me is by email.

Sincerely,

Full Circle Inspections, Inc.
122 Calistoga Rd. #196
Santa Rosa, CA 95409
(707) 528-7010

Report Highlights

The information briefly listed in this section of the report is limited, has been provided as a convenience only and may not reflect all of the concerns of the Client. The inspection report should be read in its entirety to provide as complete a picture of the property as possible.

The items listed below are hazardous or potentially unsafe and should be corrected by the appropriately licensed contractor. Other improper conditions may also be present and more specific information can be found in the narrative portion of this report.

Exterior

Lot:

Steps:

Steps into the house are higher than standard.

Pool step treads/risers are inconsistent.

Spacing between railing members at the pool steps is greater than allowed by current construction standards and the treads are uneven.

Electrical System

Service Equipment:

General:

This panel can be easily opened and the electrical contacts and wiring are readily accessible.

Garage Panel:

General:

The dead-front is not properly secured.

General Wiring:

Grounding System:

The carport and garage circuit breaker panels are not properly grounded.

Attic Area Conditions:

Improper and unsafe wiring was found at areas throughout the attic.

Terminated electrical cable with exposed leads, unprotected electrical splices, open junction boxes and individual conductors were observed at areas throughout the attic space.

Charred wood framing, insulation and wiring was found above the hallway.

Foundation Area Conditions:

Improper wiring was found in the crawlspace area.

Electrical Fixtures:

Exterior Fixtures:

Switches and wiring have been pulled-out of electrical boxes adjacent to the tall carport and the pool steps.

A plug/cord is hanging at the right side.

No waterproof covers present on the exterior boxes, switches and outlets.

Carport Fixtures:

Electrical wiring is unsafe and nonstandard.

Garage Fixtures:

Electrical wiring is unsafe and nonstandard.

The items listed below are improper, in poor condition or potentially expensive to repair/correct. While not immediately hazardous, the conditions described below may become unsafe if not corrected. Other improper conditions may also be present and more specific information can be found in the narrative portion of this report. I recommend obtaining repair estimates from appropriately licensed contractors before the release of conditions for purchase of this property.

Exterior Structures

Carpport:

Roof:

The roof is old and in generally deteriorated condition.

Attached Shed:

The shed structure is not well supported/constructed.

Roof

Flashings:

Roof/Wall Flashings:

Roof/wall flashing at the garage/house connection is not complete.

Chimney Flashings:

Asphalt patching compound (mastic) has been applied to the chimney flashing.

Attic:

Framing:

Charred areas of framing were found above the hallway.

The roof framing consists of 2x4s.

Ceiling joists and mid-span beam are being supported by the masonry fireplace.

Leaks:

Moisture staining was found on the roof sheathing at various areas throughout the attic.

Foundation Area

Support System:

Floor System:

Decayed/damaged wood sub floor sheathing found under the tub.

Plumbing System

Supply:

Materials:

A slow leak was found at the supply pipe at the right side of the house.

Waste:

Material:

A slow leak was found at the drain pipe under the bathtub and no p-trap is present.

Improper slope observed in the kitchen drain/waste pipe.

An ABS pipe has been connected to a cast-iron fitting.

Fuel Supply:

Location:

Gas piping has been modified at a few locations.

Kitchen Fixtures:

Supply & Drain:

Plumbing under the sink is deteriorated.

Bathroom Fixtures:

Supply & Drain:

A leak was observed at the half bathroom sink supply.

Older shutoff valves and drain fittings are present at interior plumbing fixtures.

Electrical System

Service Equipment:

General:

This panel is not designed for exterior locations.

Conductors:

Multiple wires are connected to a single circuit breaker terminal connection where only one wire should be connected.

The grounding conductor from the carport panel is not connected.

Some conductors are pushing out of the front of the panelbox.

Carport Panel:

Conductors:

Neutral and ground wires are connected together in this panel.

Wires are undersized for the breaker size.

Garage Panel:

General:

Knockouts are missing at the dead-front.

The dead-front is not properly secured.

Over Current Protection:

The 60 amp circuit breaker handles are not connected together.

Conductors:

Multiple wires are connected to a single circuit breaker terminal where only one wire should be connected.

Neutral and ground wires are connected together in this panel.

Interior Fixtures:

Polarity was reversed at receptacle outlets at the north and south bedrooms.

The ceiling light fixture at the west bedroom did not function.

Electric wall heaters are present in the living room and the south bedroom.

Extension cord has been used as semipermanent wiring.

Other Comments:

A considerable number of improper wiring conditions were found throughout this property.

Interior Rooms

Ceilings:

The hallway ceiling is scorched.

Cracks are present in the ceilings.

Windows:

Evidence of leaking was observed adjacent to the living room and south bedroom windows.

Windows in the north bedroom are not an adequate size for emergency egress.

Floor level windows and windows adjacent to doors do not appear to be safety glass.

Full Circle Inspections, Inc.
122 Calistoga Rd. #196
Santa Rosa, CA 95409
(707) 528-7010

Report Contents

Cover Page	1
Introduction	2
Report Highlights	3
General Conditions	7
Exterior	9
Exterior Structures	13
Roof	16
Foundation Area	21
Garage	24
Heating System	25
Plumbing System	26
Electrical System	33
Fireplace	46
Kitchen	47
Bathrooms	50
Interior Rooms	54
Glossary of Terms	Appendix

General Conditions

Client Information:

Client Name:

Ford Prefect & Arthur Dent

Present for the inspection.

Payment:

Inspection fee: \$450.00.

Building Information

Inspection Address:

3316 Golgafrincham Dr.

Magrathea, CA

Modifications have been made to this home since original construction. Building modifications normally require local building department approval, which includes submitted plans and specifications of the work to be performed, city licenses, building permits, on-site progress inspections, and a final sign-off by a building inspector employed by the building department. Verification of permits is beyond the scope of this home inspection. The local building department should be contacted for information regarding the permit history for this property, whether or not permits are required or should be obtained for the completed work, the permit/inspection process and any other complete or incomplete building department requirements.

Homes constructed prior to the mid 1970s often used building materials containing asbestos and/or lead. This can be of concern if the materials are in deteriorated condition or if remodels/additions are planned. The Centers for Disease Control and Prevention (CDC) and the Environmental Protection Agency (EPA) has information regarding the potential hazards as well as ways to mitigate these hazards. If specific information about this home is desired, a qualified testing laboratory should be consulted.

Structure Type:

This is a wood framed, one story single family residence
Perimeter foundation with a crawlspace.

Occupancy:

Home was vacant at time of inspection.

Utilities Status:

All utilities were on at time of inspection.



General Information:

File Number:

0809-3114

Date & Time:

Inspection began at approximately 8:40 a.m. and finished at approximately 11:30 a.m.
August 10, 2009

Inspector:

Gunnar Alquist.

Agent:

Tricia (Trillian) MacMillan, HHGTTG Properties. Present for the inspection.

Weather:

Hot and clear at time of the inspection.

Orientation:

For purposes of describing conditions noted in this report, orientation is referenced from the front door.

Report Limitations:

This report is intended only as a general guide to help the client make their own evaluation of the overall condition of the structure, and is not intended to reflect the value of the premises, nor make any representation as to the advisability of purchase. The report expresses the professional observations made by the inspector, based upon a visual inspection of the conditions that existed at the time of the inspection. The inspection and report are not intended to provide a repair or "punch" list, to be technically exhaustive, or to imply that every possible defect was discovered. Underground, concealed, or enclosed systems or components cannot be inspected. Identification of toxic materials or growths can only be made in a laboratory. If information regarding recalled products is desired, the CPSC maintains a website at <http://www.recalls.gov/> with this information. This report is provided for the named client only and is not transferable. A full description of the scope of this inspection and report is listed in the Inspection Agreement. Any general comments about systems and conditions that are excluded in the Inspection Agreement are informational only and do not represent an inspection. Any opinions expressed regarding adequacy, capacity, or expected life of components are general estimates based on information about similar components and variations are to be expected between estimates and actual experience. Any photographs or images that are included are intended to help provide clarification for these specific items and may not include all problem areas noted in the written report. Any repair or corrective work recommended in this report should be performed by a licensed contractor qualified in that particular trade. Documentation of properly completed repair work should be provided in the form of a contract, work order or receipt. Permits from the local building department are required for nearly any work done. The inspector has no interest, present or contemplated, in this property or its improvement and no involvement with tradespeople or benefits derived from any sales or improvements. To the best of my knowledge and belief, all statements and information in this report are true and correct.

Exterior

Lot:

Driveway:



Asphalt.

Driveway surface is uneven and deteriorated. Patching the surface and resealing or application of a top coat is advised.

The apron at the front of the garage is rather abrupt/steep. This could cause a vehicle to scrape as it enters or leaves the garage. Caution is advised. It may be necessary to correct the slope of the apron.

Walkways:

Concrete. Cracks are present in walkway.



Steps:



Steps into the house are higher than standard. In some cases, loose blocks have been set in front of the doors, but these are likely to move and are potentially hazardous. I recommend installation of proper steps at all exterior doors. Ideally, all steps would have easily gripped handrails.

Pool step treads/risers are inconsistent. Typically, the maximum difference in riser height or tread depth for any stairway is 3/8". This is a possible trip hazard and should be corrected.

Spacing between railing members at the pool steps is greater than allowed by current construction standards and the treads are uneven. This spacing was acceptable at time of construction and is not required to be corrected, however it does present a potential hazard to small children. Client is advised to take precautions, as needed.

Retaining Walls:

Stacked stone walls present adjacent to the pool.

These walls typically do not have reinforcing installed and will require periodic maintenance or repairs.



Grade & Drainage:

Home is built on a sloped/terraced lot. **Standing water will collect in low and flat areas during periods of rain.**

Soil Conditions:

Expansive soils are commonly found in this area. This type of soil will expand when wet and contract when dry, often leaving cracks in the soil and gaps between the foundation and the surrounding grade. This is typically a seasonal condition triggered by winter rains, although excessive landscape irrigation may also result in soil movement. This can lead to unevenness in interior floors, cracks in walls and heaving/settling of the foundation and slab areas. While diverting rain water off of the lot and away from the foundation area will often help to control this seasonal movement, completely eliminating the effects of this type of soil is usually not practical. Periodic review of concrete for large and/or uneven cracks is recommended as a part of routine home maintenance. Client should consult with a soils engineer if evidence of excessive heaving/settling of the foundation are found.

Other Comments:

A built-in pool is present. The pool and equipment were not reviewed as a part of this inspection.



Wood Siding:

Lap Siding:

Cracks observed in wood siding. Cracks and voids in siding can allow moisture to intrude into the interior surfaces of the wall. Patching or any necessary repairs are advised, to prevent damage to wood framing.

Exterior paint is deteriorated. Siding should be repainted to prevent damage to siding and structure. Surface preparation should include scraping or pressure washing to remove loose paint, caulking or filling of voids and seams, and priming with a good quality primer/sealer.

Client is advised to have the paint tested for lead contact prior to commencing preparation for painting. If lead is found, old paint should be properly addressed by a qualified lead abatement contractor.



Trim & Windows:

Trim:

Wood.

Exterior paint is deteriorated. Trim should be repainted to prevent damage to trim and structure.

Sealing all cracks/voids between siding and trim is recommended to prevent moisture intrusion to the interior surfaces of the wall.

Windows:

Metal and wood frames.

The window frames, particularly the metal frames, should be kept well caulked/sealed to prevent water from penetrating into the stud wall cavities. Old caulking at the interior corners of the frame connections should be periodically cleaned out and the connection/seams recaulked.

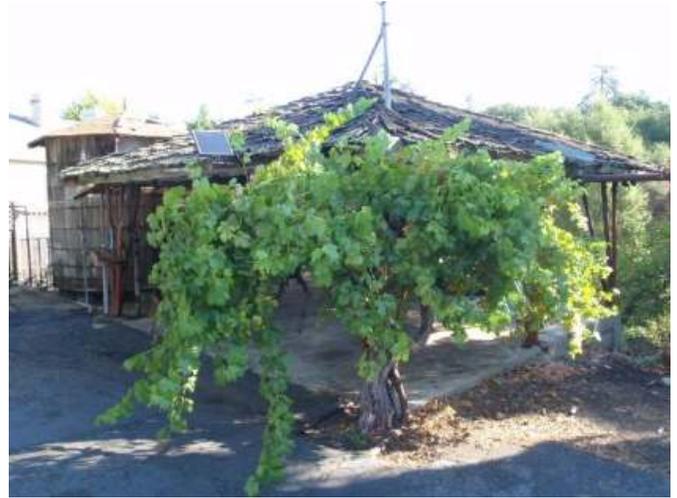
Dual glazing is present in some of the windows of this home. Installation of double glazed windows at the remainder of the house can help to increase the energy efficiency of this home by cutting heat loss through the older windows. **Some glazing showed evidence of failed seals** (moisture between the panes). This is primarily a cosmetic defect which is typically determined by discoloration or moisture between the panes of glass (however, some loss of insulation value is possible). Identified windows were marked with a blue sticker/dot in the corner. Please refer to the remainder of the report for locations. This condition can be difficult to identify and climactic or lighting conditions can impede identification of affected windows. Client should consult with a licensed glazing contractor for further review and replacement of glazing, as needed.

Exterior Structures

Carport:

Roof:
Wood shake.

The roof is old and in generally deteriorated condition. I recommend replacement of the roof covering.



Support Structure:



Metal posts with wood roof framing.

One of the posts has not been properly secured/bolted to the slab. Corrections are advised.

Slab:

Concrete. Cracks are present in slab surface. These cracks are not uncommon and usually due to curing and/or normal soil movement/settling. Corrective measures should only be taken if concrete becomes uneven or damaged.

The rear of the slab has been supported on rock (rip-rap). This is more likely to settle than compacted fill. No evidence of excessive settling observed at time of inspection. Ideally, this rock would be replaced or supported with concrete.



Attached Shed:



The shed structure is not well supported/constructed. The metal support posts are leaning. I recommend removal or resupport of this structure.

Tall Carport

Type:

Metal support structure.

The roof is supported by 5 posts. One corner post was likely omitted to allow a vehicle to be parked in the carport. No evidence of excessive sagging observed at time of inspection.



Roof:

Metal panels.

Roof

This section of the report is an opinion of the general quality and condition of the roofing material and visible elements of installation. While every effort is made to locate potential leaks, the only way to determine whether a roof is absolutely water tight is to observe it during a prolonged rainfall. Many times, this situation is not present during the inspection. Estimates on remaining life are based on past experience with similar materials and does not constitute a warranty or certification. This report is issued in consideration of the foregoing disclaimer.

General:

Style:

Gable roof.

Roof Access:

Observed from surface of roof.



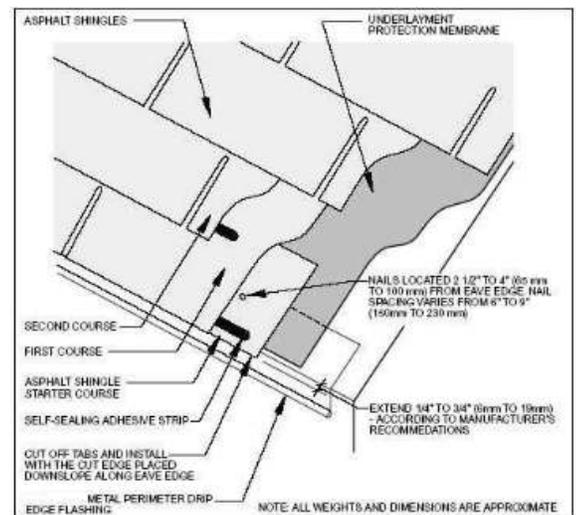
Eaves:

The construction of this roof is such that it has minimal eave protection for some of the exterior walls. As a result, these walls are more vulnerable to the effects of weather. Windows and doors can leak due to wind blown rain. Installation of awnings or covers can help to protect these areas. Keeping siding well sealed and painted is recommended to preserve the condition of the exterior surfaces.

Flashings:

Perimeter Flashings:

No flashing present at the eave ends. The purpose of flashing at the eave is to direct water from the roof into the gutter. While a flange is present on the gutter, the flange is small and may not be completely effective. Current construction standards require an angle flashing to be installed under the "starter strip" of the shingles and over the top edge of the gutter. While this may not have been required when this roof was installed, I suggest installation of flashing to protect the eaves.



Roof/Wall
Flashings:

Roof/wall flashing at the garage/house connection is not complete. This installation will allow water to flow down the exterior siding. While this may not allow leaking to the interior of the house, it is likely to lead to moisture damage over time. Flashing should direct water away from the wall.



Through
Penetrations:
Intact.

Valley Flashings:
Intact.

Chimney Flashings:



Asphalt patching compound (mastic) has been applied to the chimney flashing. In addition, this flashing is older and nail holes are present. Decayed wood and evidence of leaking was found in the attic adjacent to the chimney. This flashing is likely to leak and I recommend replacement by a licensed roofing contractor.

Shingle Roof:

Type:
Composition (asphalt) shingle.

Condition:
Roof is newer. Consulting with the seller for information regarding any applicable warranties is advised.

Plastic Panels::

Type:
Fiberglass panels.

Condition:
These panels are aged and should be replaced.



Roof Drainage:

Type:
Metal gutters.

The gutter downspouts terminate adjacent to the foundation. Adding an extender system to move the roof water away from the perimeter of the house (preferably to the street or storm drain) is recommended to aid lot drainage.



Attic:

Access:

Located at the garage. Accessed at time of inspection. Limited review at low sections due to restricted clearance.

Framing:



Rafter framing with solid wood sheathing.

Charred areas of framing were found above the hallway. This is located adjacent to a light fixture and was likely due to excess heat or arcing from the fixture. While the ceiling framing does not appear to be significantly weakened, I recommend replacement of any charred lumber. (Left photo) **(Continued on the following page)**

(Framing, cont.)

The roof framing consists of 2x4s. 2x4s were commonly used for rafters at time of original construction, but they would be considered undersized by current construction standards. Reinforcing of the roof does not appear to be necessary at this time; however, the roof structure should be monitored for any sagging that would require reinforcement of the roof structure.

Ceiling joists and mid-span beam are being supported by the masonry fireplace. Specific separations are typically required between masonry fireplaces and wood framing. I recommend independently supporting the wood framing from the masonry fireplace structure. (Right photo)

Insulation:

Insulation material appears to be shredded bark.

Charred insulation was found above the hallway. This material is likely not fire retardant. Ideally, the current insulation would be removed and replaced with a fiberglass or other fire retardant insulation material. I suggest a minimum of R-30 insulation.

Leaks:



Moisture staining was found on the roof sheathing at various areas throughout the attic. While it is likely that most of the leaking has been corrected with installation of the current roof covering, the area adjacent to the chimney has some damage and may have more current leaks. Please refer to the roof/flashing section of this report for related information.

Ventilation:

Ridge vents.

Ventilation in attic is limited. Excess heat in the attic during the summer months can contribute to accelerated wear of the roofing material and moisture can collect during the cold winter months. While no adverse conditions were observed in the attic at time of inspection as a result of the ventilation, increasing ventilation can help to reduce interior temperature during the warm months. Generally, ventilation is provided by low and high vent openings. As this roof is vented with a continuous ridge vent, installation of eave vents will help to increase airflow.

Foundation Area

Foundation & Grade:

Access Location:

Exterior access is located at the right side of the house. Foundation area was accessed as a part of this inspection.

Foundation:

Poured concrete. Common hairline cracks present. Anchor bolts are present.

Grade & Drainage:

Areas of soil were dry to damp. The majority of this dampness was under the living/dining room. While seasonal moisture is not uncommon in foundation crawlspaces in this area, moisture during the dry summer months is commonly due to excessive landscape irrigation. Cutting back on irrigation and periodic review of the crawlspace for excessive moisture is advised.



Other

Observations:

Wood scraps/debris is present on the soil under the house. As this can be misinterpreted by wood eating pests as an invitation to infest your home, I advise removal of all wood, cardboard, paper and other cellulose based material.



Support System:

Floor System:



2x8 wood joists with solid wood sheathing.

Decayed/damaged wood sub floor sheathing found under the tub. Damaged wood should be removed and resupported. A licensed pest inspection company should review this area for other damage and make recommendations and repairs, as needed.

No blocking present at some mid-span supports. Current construction standards typically require blocking or bridging to prevent the joists from "rolling". I recommend installation of blocking or bridging, as needed.

Openings were found in the subfloor sheathing. These openings can allow rodents access into areas under bathtubs and into wall cavities. While not required at time of original construction, I suggest screening any openings with a metal mesh.

Girders:

Doubled 2x4 wood girders.

These are undersized by modern construction standards. Minimum girder size, depending upon load and span, is typically 4x6. This is likely contributing to some of the cracked walls noted in the interior section of this report.



Mid Span Support:

Concrete foundation wall and wood posts supported on concrete piers provide mid span support.

Ventilation & Insulation:

Insulation:

No insulation present.

Ventilation:



Ventilation of crawspace is limited. Louvered vent screens have been used at the perimeter of the house and some venting has been provided by small holes drilled through the rim joist. While no evidence of moisture damage could be found at time of inspection, increasing ventilation should be considered. Increasing ventilation can be achieved with a few different methods. Adding perimeter vents will often provide increased air flow. Where vents are not practical, installation of a vapor/moisture barrier or retarder on the soil can help to contain much of the moisture in the soil, thereby permitting the existing vents to function more effectively. Or, a mechanical vent/fan can be used to provide increased air flow to specific areas.

Garage

Type:

Attached one car garage.



Interior:

Slab:

Concrete. Cracks are present in slab surface.

Walls:

As this house was constructed prior to requirements for a fire separation wall between the garage and house, none is present. A fire separation wall is intended to separate areas with differing uses; in this case vehicle storage from living space. While not usually required in existing homes, addition of a fire wall is recommended to enhance safety. This typically entails sheathing any walls that are common to the garage and the house (including any attic wall) with 5/8" type "X" gypsum wall board and installing a solid core door with an approved self closing device on any door that passes through this wall.

Ceiling:

Holes are present in the ceiling. These can be patched concurrently with installation of a separation wall.

Vehicle Door:

One metal sectional overhead

Door springs are "safety" type.

Garage door openers should reverse when obstructed while closing. This opener reversed when upward pressure was applied to the door as it closed. **No "electric eye" is present.** This device should be tested by the homeowner on a monthly basis to ensure continued proper operation.

Doors:

The door between the house and garage is not a solid core door. While likely not required at time of construction, installation of a solid core door with a self closing device is advised to help to slow the spread of a garage fire to the house.

Steps:

Loose laid blocks have been used as steps. I recommend proper steps with a handrail be installed.

Heating System

The heater is visually reviewed. Examination of the heat exchanger is limited as the unit is not dismantled as a part of this inspection. This is beyond the scope of this inspection. Thermostats are tested for basic functions only. Determining the proper sizing of heating units is beyond the scope of this inspection. Adequacy, efficiency or the even distribution of air throughout a building cannot be addressed by a visual inspection, however a subjective evaluation is made. Normal service and maintenance is recommended on a yearly basis.

Furnace:

Type:

Make: Payne.

Gas, forced air unit. Input: 88,000 BTU per hour.

As this is a gas fired appliance, installation of a carbon monoxide (CO) detector near the bedrooms is advised for added safety.



Location:

Garage.

The furnace is unprotected. Normally, when a furnace is located in an area where it can be damaged by a vehicle, protection is provided in the form of a bollard (concrete filled metal pole) or similar device. Installation of a bollard or other protection is advised.

Condition:

Gas shutoff valve and electric disconnect present.

Heater is a higher efficiency unit with a sealed heat exchanger. As such, the interior of the heat exchanger was not accessible for a visual inspection. Heater was operated at time of inspection. Regular maintenance is recommended to ensure continued operation.

Flue/Vent:

Intact.

Filters:

Filter is located at the return air grill.

Thermostat:

Thermostat operated when tested. Installation of a "setback" thermostat with a timer should be considered as an upgrade to allow heater to be turned down automatically when not needed.

Ducting:

Flexible plastic sheathed ducting.

Limited air flow observed at some bedroom registers. This may be due to the length of the duct run or the size of the ducts. As evaluation of air flow is subjective, client is advised to judge air flow independently. Any further review should be conducted by a licensed heating contractor.

Plumbing System

All underground piping related to water supply, gas supply, waste, or sprinkler use are excluded from this inspection. Condition of underground piping cannot be detected by a visual inspection. Evaluation of water flow is subjective and judged by operating fixtures and visual observations of flow. Plumbing fixtures are tested for operation, however minor items such as a dripping faucet may not be noted as it is considered routine maintenance. Main and branch shutoff valves are not operated as this can result in leaking around the valve stems. Periodic testing and operation of shutoff valves is advised to ensure proper operation when needed.

Supply:

Main Shutoff:

Water is provided by a well. Main water shutoff is located at the well and in the garage. This is a specialized system and due to the inaccessible nature of the pump and lines, beyond the scope of this inspection. Water pressure, quality and flow rate are a function of the well system. Review of this system by a qualified well specialist is recommended.

This is an older valve which may not function properly. Older valves commonly do not close completely and/or function properly. While not tested, preventative replacement is advised.



Materials:

Where visible, supply piping is copper and galvanized.

The galvanizing material will corrode on the interior of the pipe and become restricted over time. Presently, the water flow appeared serviceable, however judgment of water flow adequacy is subjective; therefore client should review this personally. Water quality will determine the usable life of the pipe. Condition of the interior of the pipe could not be determined and restriction will, most likely, occur over time.

A slow leak was found at the supply pipe at the right side of the house. A licensed plumbing contractor should be hired to make repairs or corrections, as needed.



Exterior Hose Bibbs:

Some exposed exterior plumbing consists of PVC piping. This material can be damaged by sunlight and eventually becomes brittle. Painting the pipe can help to extend the useful life of the material, however eventually the pipe will leak or break.

Waste:

Material:



Where visible, waste lines are ABS (plastic) and galvanized steel.

A slow leak was found at the drain pipe under the bathtub and no p-trap is present. Wood framing and sheathing were not wet at time of inspection; however damaged/decayed lumber was found adjacent to this area. A licensed plumbing contractor should be hired to make repairs or corrections, as needed. (Upper photos)

Improper slope observed in the kitchen drain/waste pipe. As the waste lines require a minimum of $\frac{1}{4}$ of an inch vertical drop per foot of horizontal run from the plumbing fixtures to properly drain the waste water, this pipe should be adjusted or corrected, as needed, to provide the necessary slope. **(Continued on the following page)**

(Waste, cont.)

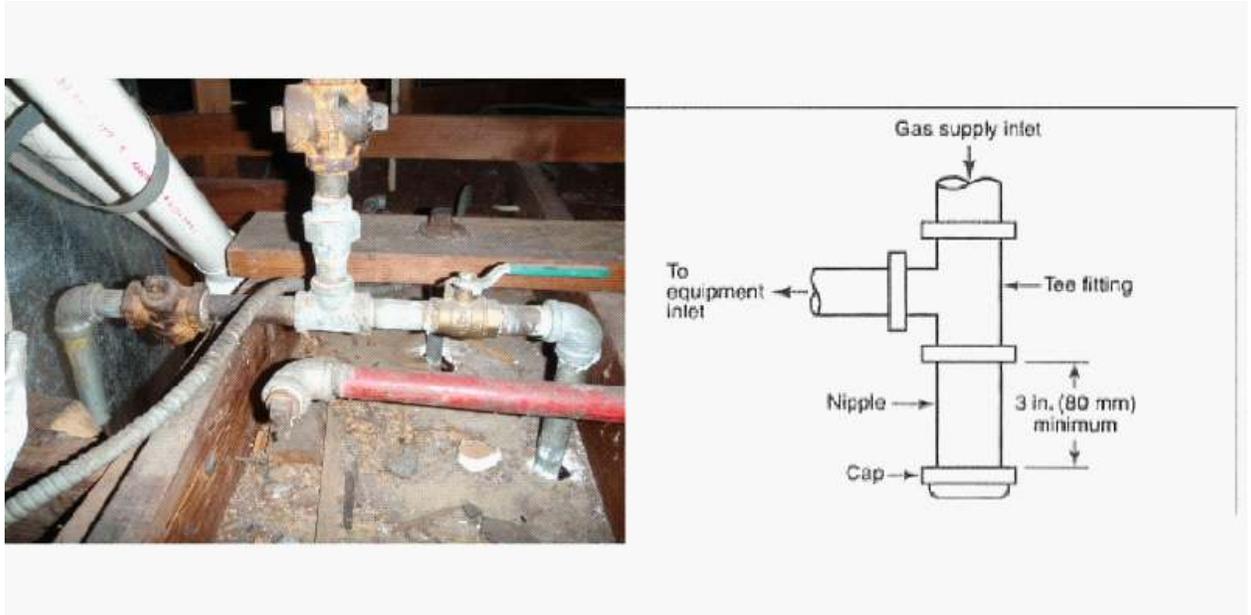
An ABS pipe has been connected to a cast-iron fitting. Unable to determine how this connection has been made as I know of no approved method to connect these two fittings together. This should be addressed by a licensed plumbing contractor concurrently with other corrections noted in this report. (Lower/left photo)

Unable to determine the type or condition of the buried piping. Much of the original waste piping has been replaced, but the vent piping and some of the waste piping is original. This home likely originally used an onsite waste disposal system (septic). Unable to determine if this system is still present or if it was removed when the neighboring properties were developed. If more information is desired, a licensed plumbing contractor can run a video camera into the sewer piping to determine type and condition.

A loose cleanout or RV dump inlet was found at the tall carport area. This appears to be an older "transite" pipe material that likely contains asbestos. I recommend a tight-fitting cap be installed to prevent sewage spills should the waste line become clogged. If concerned about the potential asbestos content, a qualified testing laboratory or abatement contractor should be consulted. (Lower/right photo)

Fuel Supply:

Location:



Not found. I recommend the gas meter be located.

Gas piping has been modified at a few locations. Some gas shutoff valves do not have handles. I recommend corrections by a licensed plumbing contractor.

No sediment traps found adjacent to gas appliances. Sediment traps are typically required to be installed adjacent to the appliance shutoff by most gas appliance manufacturers and are intended to prevent debris from entering and obstructing the appliance valve. This is apparently not enforced by the local building department. I recommend review of the installation instructions for each appliance and installation of sediment traps, as needed.

Water Heater:

Type:

Make: Bradford-White

40 gallon gas water heater.



Location:

Garage.

No drain pan present under this tank. Although located in a garage and not necessarily required, if the tank were to leak, the water would flood the floor in this area. As many people store personal property on the floor of the garage, I suggest installation of a pan that drains to the exterior.

The water heater is supported on a platform that is suspended from the roof framing. This is nonstandard support and I cannot determine if it is adequate. I recommend construction of a wood framed platform under the water heater.



Flue/Vent:

The flue pipe has inadequate clearance to the paper on the gypsum wall board ceiling.

Normally, a minimum clearance of 1 inch to combustible material is required. While no evidence of scorching or charring was observed at time of inspection, isolating the flue from contact with the ceiling is suggested. This is typically achieved by cutting away some of the ceiling material and installation of a metal collar to close the gap.



Safety Valve:

A temperature/pressure (T/P) relief valve with a discharge line is present. This valve was not tested at time of inspection as it is designed as a safety valve only and may leak after testing.

Seismic Bracing:

Two straps present. While these straps are attached to the wall framing and will provide some resistance to seismic movement, they do not appear to have been installed as specified and may not perform as intended. The intent of seismic bracing is to restrict the water heater from falling over in the event of an earthquake. The distance from the tank to the wall is greater than 1 inch, which will allow the tank to move laterally during an earthquake. Most manufacturers' instructions require this space be filled or a cradle installed to prevent movement. Complete instructions can be obtained from the manufacturer of the kit. These should be reviewed and corrections made, as needed.



Condition:

Gas and cold water shutoff valves present.

Water heater operated at time of inspection.

Temperature Setting	Time to Produce 2nd & 3rd Degree Burns on Adult Skin
170° F	Nearly instantaneous
160° F	About 1/2 second
150° F	About 1-1/2 seconds
140° F	Less than 5 seconds
130° F	About 30 seconds
125° F	About 2 minutes
120° F	More than 5 minutes

Kitchen Fixtures:

Supply & Drain:

Plumbing under the sink is deteriorated. In addition, the drain piping is improperly sloped. No leaking noted at time of inspection. Deteriorated plumbing should be replaced to prevent future leaks and damage.

No airgap present on the dishwasher drain line. I advise installation of an air gap to prevent water from siphoning from the sink back into the dishwasher.

Bathroom Fixtures:

Supply & Drain:

A leak was observed at the half bathroom sink supply. Repairs should be made by a licensed plumbing contractor to prevent damage to cabinet and/or structure.

Older shutoff valves and drain fittings are present at interior plumbing fixtures. Client is advised that older valves often do not function properly and fittings are more prone to leaking due to aged washers and packing. Replacement of older fittings should be undertaken as a part of routine maintenance and repairs.



Toilet:

There is a leak at the half bathroom toilet flush valve. Adjustment or repair of the valve is advised to restore proper operation.



Tub:

The shower head sprays the wall. This should be resealed or corrected to prevent water from penetrating to the interior of the wall cavity.



Laundry:

Washer Hookup:

Present, not tested. Unable to evaluate condition of drain lines.

Dryer Hookup:

Both gas and 220 volt electric are available.

Laundry Sink:

The supply valves were off at time of inspection.

These valves are shared with the sink and the washer supply and cannot be turned-on until a clothes washing machine is installed.



Electrical System

Electrical Service:

Type:

Service wires are underground. Underground conductors cannot be reviewed. Main electrical service is 100 amperes, 240 volts.

Service Equipment:

General:

Service equipment panel is located at the corner of the carport.

This panel is not designed for exterior locations. While located under the roof of the carport, it is still essentially in a damp location and my primary recommendation is replacement of this panel with one designed for exterior installation. At a minimum, a siding enclosure can be constructed to enclose the panel and adjacent wiring.

This panel can be easily opened and the electrical contacts and wiring are readily accessible. Locking or securing the cover is advised to prevent access to the interior of the box by children or other unauthorized person.



Over Current

Protection:

Over current protection is provided by fuses. Main disconnect is present.

Conductors:



Multiple wires are connected to a single circuit breaker terminal connection where only one wire should be connected. This can prevent the wires from having positive contact with the connector which could lead to arcing or shorting. This is normally corrected by installing additional circuit breakers. Any corrections should be made by a licensed electrical contractor.

The grounding conductor from the carport panel is not connected. This should be connected to the grounding terminal in this panel and a grounding terminal in the carport panel.

Some conductors are pushing out of the front of the panelbox. I recommend adjustment/correction of wiring to allow the cover to be easily closed.

Carport Panel:

General:

This panel is not designed for exterior locations. While located under the roof of the carport, it is still essentially in a damp location and my primary recommendation is replacement of this panel with one designed for exterior installation.



Over Current Protection:

Over current protection is provided by circuit breakers.

Individual 30 amp, single pole circuit breakers have been used. 30 amp, 120 volt circuits are unusual in residential construction. I believe that these breakers provide 240 volt power to outlets in the carport area. Double-pole, 240 volt circuit breakers should be connected together to allow both breakers to "trip" off should an overload occur. This should be corrected by a licensed electrical contractor concurrently with other repairs noted in this report.



Conductors:

Neutral and ground wires are connected together in this panel. Current electrical standards require that the grounding circuit be separated from the "neutral" circuit. A separate grounding circuit should be provided back to the service equipment (main panel). Corrections should be made by a licensed electrical contractor.

Wires are undersized for the breaker size. #12 wires are connected to 30 amp breakers. This sized wire should not be connected to a circuit breaker that exceeds 20 amps. This installation can allow the wire to carry excess current which could permit the wires to overheat. This should be corrected by a licensed electrical contractor concurrently with other repairs noted in this report.



Garage Panel:

General:

Knockouts are missing at the dead-front. These openings present a potential safety hazard as they provide access to the energized electrical wiring and buss bars of the panel. This is typically corrected by inserting covers specifically designed to close these openings.

The dead-front is not properly secured. The dead-front is a sheet metal panel that allows access to the circuit breaker handles while covering the live/energized wiring within the panel. I recommend this be attached/secured to the panelbox with proper screws. The screws used should be similar to the screws originally supplied with the panel and should not be pointed/sharp.

Accurate and complete identification and labeling of all individual branch circuits is advised.



Over Current Protection:



Over current protection is provided by circuit breakers.

The 60 amp circuit breaker handles are not connected together. 240 volt, double pole breakers are typically connected together to allow both of the breakers to be turned off or tripped simultaneously. Installation of handle ties is recommended to allow the breakers to function properly.

Conductors:

Multiple wires are connected to a single circuit breaker terminal where only one wire should be connected. This can prevent the wires from having positive contact with the connector which could lead to arcing or shorting. This is normally corrected by installing additional circuit breakers. Any corrections should be made by a licensed electrical contractor.

Neutral and ground wires are connected together in this panel. Current electrical standards require that the grounding circuit be separated from the "neutral" circuit. A separate grounding circuit should be provided back to the service equipment (main panel). Corrections should be made by a licensed electrical contractor.



Other Comments:

Conditions have been reported with this brand of electrical panel (Zinsco/Sylvania) that include arcing at the circuit breaker/buss bar connections. This is likely due to way the circuit breaker attaches to the buss bar. As a result of this design, this panel is more likely to fail than a newer panel. This brand of panel was very commonly used in structures built between the early 1960s through the mid 1980s. Consequently, I find this brand of panel in the vast majority of similarly aged homes that I inspect. Some electrical contractors are reluctant to perform work on these panels, typically citing liability concerns. Other electrical contractors suggest examining the connections between the circuit breakers and the buss bars for loose connections and/or arc damage and having all electrical connections in these panels tightened, as needed, to ensure that the proper contact is being maintained. The most prudent course would be to replace the panel. At a minimum, some preventative maintenance seems reasonable as replacement of a panel can be costly. As these panels are no longer being manufactured, upgrade/replacement parts can be difficult and expensive to obtain should the need arise. While no evidence of arcing was observed within this panel at time of inspection, positive determination can only be made by having an electrician remove the circuit breakers in order to inspect the buss bars. If more information or further review is desired, a licensed electrical contractor should be consulted. Requiring documentation or other hard evidence is suggested should an electrician advise replacement.

Panel:

General:



Other, older fuse panels are present in the garage. I recommend removal of these panels and properly removing/terminating the wiring/conductors.

General Wiring:

Conductors:

Branch circuit conductors are copper. Some wiring is provided by nonmetallic sheathed cable (romex type) and other wiring is provided by armored cable.

Grounding System:



Ground rod is present adjacent to the carport.

The carport and garage circuit breaker panels are not properly grounded. The grounding conductor for the carport panel is not connected and no grounding conductor has been provided for the garage panel. A grounding circuit should be installed.

The conduit is acting as ground conductor for some of the branch circuits. While this was not uncommon at time of construction, the lack of a positive connection between the receptacle outlet and the conduit may prevent proper grounding from occurring should an electrical wire become short circuited. To provide a better grounding circuit, the grounding screw on each three pin receptacle outlet, switch and light fixture should be bonded (connected) to the metal box that houses the outlet.

The plumbing system does not appear to be bonded to the electrical grounding system. All metal piping is currently required to be connected (bonded) to the grounding system. This may not have been required at time of construction. Should the metal piping become energized (through a lightning strike or other means), the bonding will conduct the current to ground. Normally, a bonding wire is attached/clamped to the cold water supply pipe where the main water enters the building, a jumper is clamped to the hot and cold water piping adjacent to the water heater to ensure that both the hot and cold water supply piping is properly bonded, and a bonding wire is clamped to the gas supply piping adjacent to the gas meter or the water heater. Bonding of the metal drain/waste piping is also advised. No bonding wires/clamps were found at these locations. Installation/upgrading of bonding is advised.

GFCI Protection:

This building does not have GFCI (ground fault circuit interrupter) devices installed at the bathroom, kitchen, garage or exterior receptacle outlets. GFCI devices will interrupt (turn off) power to specific protected receptacle outlets if an imbalance occurs. While not required at time of construction, these devices do increase the safety of the electrical system and installation should be considered as an upgrade. Although this is a straightforward job and installation instructions are included with the device, any modifications to the electrical system should be made by a licensed electrical contractor.

Attic Area
Conditions:



Improper and unsafe wiring was found at areas throughout the attic. Terminated electrical cable with exposed leads, unprotected electrical splices, open junction boxes and individual conductors were observed at areas throughout the attic space. A licensed electrical contractor should be hired to make any needed repairs or corrections.

Charred wood framing, insulation and wiring was found above the hallway. This indicates an electrical fire that was caused either by a hot or faulty light fixture or faulty wiring. The light fixture and any damaged wiring should be replaced. The recessed "can" lights in the attic do not appear to be designed for direct contact with building insulation. I recommend replacement of all of these light fixtures. At a minimum, properly sized light bulbs should be used and insulation should be kept at least 2 inches away from the lights.

Foundation Area
Conditions:



Improper wiring was found in the crawlspace area. Porcelain light fixtures are not secured to junction boxes and electrical splices are not enclosed in junction boxes. Corrections should be made by a licensed electrical contractor concurrently with other repairs noted in this report.

Electrical Fixtures:

Exterior Fixtures:



Switches and wiring have been pulled-out of electrical boxes adjacent to the tall carport and the pool steps. I suspect other unsafe and nonstandard wiring is present as well. A licensed electrical contractor should make repairs or corrections concurrently with other electrical repairs.

A plug/cord is hanging at the right side. This is nonstandard. While not "live" at time of inspection, this should be removed and the wiring properly capped/terminated by a licensed electrical contractor.

No waterproof covers present on the exterior boxes, switches and outlets. Waterproof covers should be installed to help prevent moisture from coming in contact with electrical wiring.

Carport Fixtures:



Electrical wiring is unsafe and nonstandard. No cover plates present on some junction boxes, nonmetallic sheathed cable has been used, loose wiring is not secured/hanging down and receptacle outlets are not GFCI protected. In addition, receptacle outlets do not have waterproof exterior covers. A licensed electrical contractor should be hired to make any needed repairs or corrections.

Garage Fixtures:



Electrical wiring is unsafe and nonstandard. Terminated wiring and open junction boxes are present. Corrections should be made by a licensed electrical contractor concurrently with other repairs noted in this report.

Kitchen Fixtures:

Most of the receptacle outlets are the older, two pin, non-grounded type. Receptacle outlets that serve major appliances with a metal chassis (refrigerators, dishwashers, ranges, etc.) should be grounded. When grounding is not available for receptacle outlets that serve the counter surfaces, installation of GFCI (Most ground fault circuit interrupter) devices is advised. Please refer to the "Grounding System" and GFCI notes earlier in this section for more information.

Bathroom Fixtures:

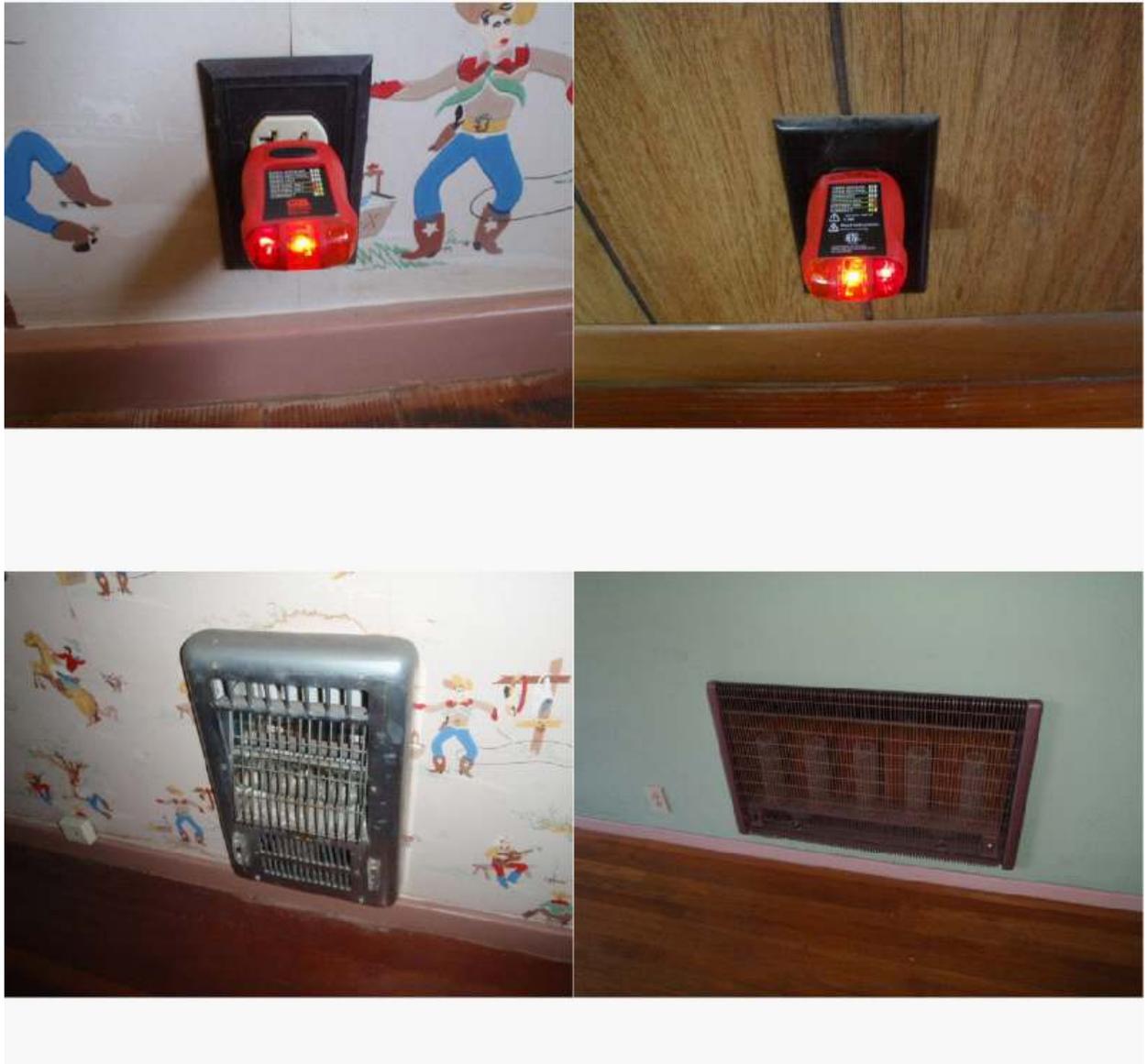


Receptacle outlets are not GFCI (ground fault circuit interrupter) protected. For more information, please refer to the GFCI notes above.

The electric wall heater did not function. I recommend removing this heater, properly terminating/removing the electrical wiring and patching the wall.

Light globe is not present at the half bathroom.

Interior Fixtures:



Polarity was reversed at receptacle outlets at the north and south bedrooms. Reversed polarity in an outlet is usually the improper connection of wires to the receptacle itself. Many appliances have "polarized" plugs (the neutral prong is wider than the "hot" prong) and may not function properly if the wiring is reversed. This is typically corrected by switching the wiring on the receptacle (white to silver colored connection and black to brass colored connection). However, due to the hazards associated with electricity, a licensed electrician should make these corrections.

The ceiling light fixture at the west bedroom did not function. This is typically due to a burnt-out bulb, but may be related to the damaged and improper wiring found in the attic.

Electric wall heaters are present in the living room and the south bedroom. The heater in the south bedroom did not function. I recommend removal of both of these heaters, termination/removal of the wiring and patching of the walls. **(Continued on the following page)**

(Interior Fixtures, cont.)

Extension cord has been used as semipermanent wiring. Extension cord wiring is not sufficient for permanent installation, as the insulation on the wiring is not formulated for long term use. Over time it deteriorates, eventually causing a fire hazard to develop. Extension cord wiring should be replaced with wiring intended for long term permanent use.

Other Comments:

A considerable number of improper wiring conditions were found throughout this property. As such, the client is advised that other incorrect and/or unsafe electrical conditions are likely to be discovered during the course of correction/repairs. A licensed electrical contractor should be hired to fully assess the entire electrical system, design and make any corrections deemed necessary.

Fireplace

The fireplace inspection is limited to readily accessible components of the fireplace and chimney only.

Fireplace:

Type:

"Zero clearance" fireplace unit.

This type of fireplace is typically designed for small, wood burning fires and not intended for a source of primary heat for the home. Large fires can cause damage to the interior of the firebox and chimney. If more information is desired regarding the intended use of the fireplace, consulting with the manufacturer is recommended.

A fireplace insert is present. Client is advised that the throat and damper of the fireplace are sometimes dismantled or damaged during installation of the insert. Review of the fireplace and flue is restricted due to the presence of the insert. Cleaning and review of the flue and firebox by a qualified chimney sweep is advised.

Many wood burning appliances are coming under increased scrutiny by local municipalities in regard to air pollution. In June of 2004, the City of Santa Rosa passed an ordinance prohibiting the use of "non-certified" wood stoves and inserts. Unable to determine if this unit meets the current EPA standards. In addition, wood burning is banned during "Spare the Air" days, with few exceptions. The Bay Area Air Quality Management District should be consulted for more information. I also advise consulting with the local building department for information regarding any new regulations on existing wood stoves.

Exterior & Chimney:

Masonry chimney.

A spark arrester is present as a safety feature. Review of chimney is limited due to the length of the flue and the presence of the spark arrester. The spark arrester was not removed as a part of this inspection.

No strap anchors found in the attic. Straps are typically required to be embedded into the masonry as the chimney is constructed and attached/secured to the roof framing to help brace the chimney against seismic movement. I suggest consulting with a licensed and qualified masonry contractor for more information and installation of straps, as needed.



Kitchen

The kitchen review is a combination of a visual inspection and basic functional test of built-in appliances. Stand alone refrigerators/freezers, if present, are typically considered personal property and are outside the scope of the inspection. No opinion is offered as to the adequacy or accuracy of operation. Clocks, timing devices and thermostat accuracy are not tested and appliances are not moved during the inspection.

Fixtures:

Counter &

Cabinets:

Counter surface is plastic laminate.

Floor:

Resilient.

The floor surface is worn/damaged. I recommend replacement.

Walls & Ceilings:

Cracks are present in the walls. As noted in the interior section of this report, this is may be due to the type of soils present in this area, or the type of floor support system under the house.

Windows:

The large windows are stuck and I was unable to open them.

Sash cord on double hung window is broken/missing. Replacement of broken sash cords or springs is recommended.

Doors:

Doors are misaligned. This is likely related to the cracked walls.

Plumbing:

Sink:

Stainless steel.



Supply & Drain:



Plumbing under the sink is deteriorated. No leaking noted at time of inspection. Please refer to the plumbing section of this report for related information.

A galvanized tee has been used on the copper piping. This can corrode due a chemical reaction with the copper. I recommend replacement.

No airgap present on the dishwasher drain line. Please refer to the plumbing section of this report for related information.

Appliances:

Ventilation:

This is a recirculating fan and does not vent to the exterior. While likely not required by current construction standards, many range manufacturers do advise that a range hood be vented to the exterior. Cooking will tend to aerosolize moisture and fat droplets that would be better exhausted to the outdoors. The duct serving the hood should have a smooth interior surface, should be airtight and be equipped with a back-draft damper. However, installation of a vented hood is not always practical. At a minimum, the filter should be kept clean to ensure proper operation.

Range:

Make: General Electric, electric range.



Dishwasher:

Make: Kenmore.

A pan is present under the water supply connection under the dishwasher. No active leaking found while testing this appliance.



Bathrooms

Bathrooms are visually inspected for signs of moisture and leaking. Minor items such as a dripping faucet are not always noted as they are considered a part of routine maintenance.

Hall Bathroom:

Sink:

Serviceable.



Supply & Drain:

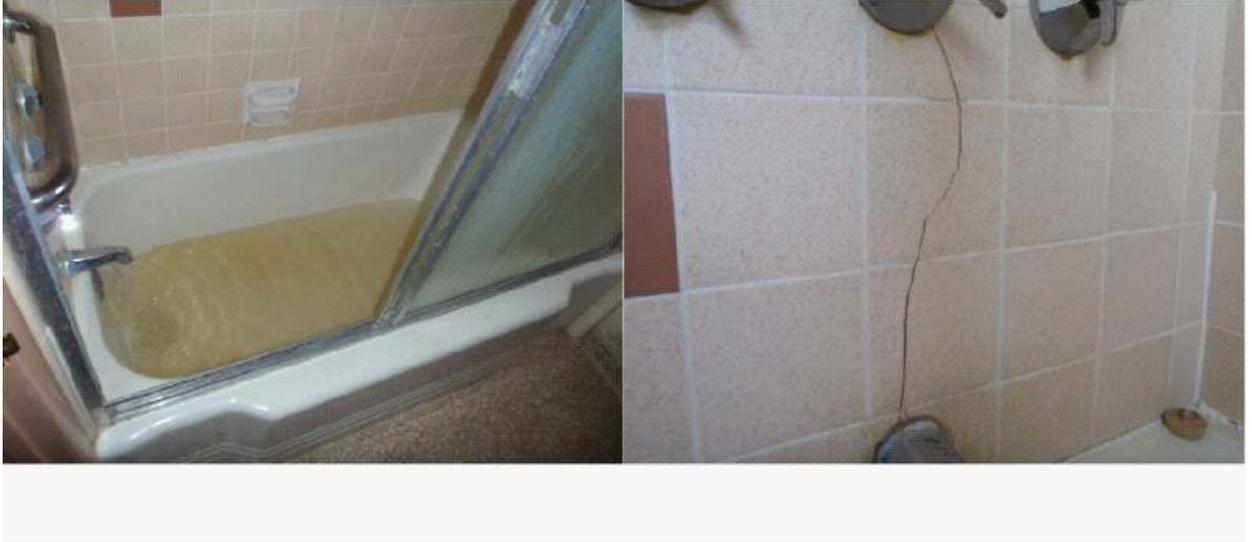
Plumbing fittings and valves are older. Please refer to the plumbing section of this report for related information.



Toilet:

Serviceable.

Tub & Surround:



Tile surround walls.

Cracked tiles and grout observed. Cracks should be sealed to prevent moisture from gaining entry behind the tile.

Unable to determine if enclosure doors have safety glass installed; unable to locate label. Typically, homes of this age were required to have safety glass installed in the shower enclosure. The presence of safety glass could not be verified.

The escutcheon trim at the valves rotate. Corrections are advised.

Counter &
Cabinets:
Serviceable.

Floor:
Resilient.

Walls & Ceilings:
Walls are papered.

Cracks were observed in the walls at a few locations. Please refer to the interior section of this report for related information.



Doors:

No privacy lock present at the toilet area.

Windows:



Windows are stuck shut.

Half Bathroom:

Sink:

Wall hung sink.



Supply & Drain:

A leak was observed at the sink supply. Please refer to the plumbing section of this report for related information.

Toilet:

There is a leak at the toilet flush valve. Adjustment or repair of the valve is advised to restore proper operation.

Floor:

Resilient.

Walls & Ceilings:

Tile at the wall is damaged and loose. This should be corrected/repared.

Doors:

Serviceable.

Windows:

Serviceable.

Interior Rooms

The condition of walls behind wall coverings and furnishings cannot be judged. Only the general condition of visible portions of floors is included in this inspection. As a general rule, cosmetic deficiencies are considered normal wear and tear and are not reported. Determining the source of odors or like conditions is not a part of this inspection. The condition of floors underlying floor coverings is not inspected. As minor flaws such as a torn screen or cracked window can be overlooked, client should review these items personally.

Interior Rooms:

Floors:

Wood.

Walls:

Cracks observed in wall surface. Cracking in walls and ceilings is often due to shrinkage/twisting of wood framing members or the soil conditions noted earlier in this report.

Some walls are paneled and some are papered.

Ceilings:

The hallway ceiling is scorched. Please refer to the attic and electrical sections of this report for related information.

Cracks are present in the ceilings.



Windows:



Evidence of leaking was observed adjacent to the living room and south bedroom windows. This is likely due to active leaking. The exterior of this window should be reflashed or resealed, as needed. Unable to determine the condition of enclosed framing without destructive testing. This should be reviewed by a licensed pest inspector for any wood damage.

Windows in the north bedroom are not an adequate size for emergency egress. Windows in sleeping areas (bedrooms) should allow for exit in the event of an emergency. Window openings in bedrooms should be no less than 20" wide by 24" high and the sill should be no greater than 44" above floor level. This is a potentially unsafe condition and corrections should be made to allow for emergency egress. This typically requires replacement of the window. **(Continued on the following page)**

(Windows, cont.)

Floor level windows and windows adjacent to doors do not appear to be safety glass. Tempered or laminated glass is required by current construction standards to be installed in windows that are installed within 18 inches of a floor or within 24 inches of a door. This may not have been required at time of original construction. Ideally, windows would be upgraded or replaced for safety.

Exterior Doors:

Deadbolt lock is not properly installed. Only the decorative strike plate has been used. Most deadbolt manufacturers include a heavier/thicker metal plate that is attached to the wall framing with 3 inch long wood screws. This lock will have limited resistance to forced entry.

Glass in doors does not appear to be safety glass. While possibly not required at time of original construction, upgrading glazed doors is advised to increase safety.

As a general rule, having a qualified locksmith re-key or change any exterior locks is advised.

Interior Doors:

Serviceable.

Closets:

South bedroom closet door is damaged.

Smoke Alarm:

Located:

Located at hall. Smoke alarm responded to test button operation. As the age of the battery in the smoke detector could not be determined, replacement of the current batteries with fresh ones is advised. Smoke alarms should be tested on a monthly basis to ensure proper operation. Batteries should be replaced annually. The National Fire Protection Association advises that all smoke alarms be replaced every 10 years.

Adding smoke alarms in all bedrooms is advised for additional safety.

Glossary of Terms

ABS Pipe: (Acrylonitrile Butadiene Styrene) Black plastic pipe used for sewer and drainage. This product has been commonly used in residential and light commercial construction throughout most of California since the late 1960s. This material is subject to ultraviolet breakdown unless inhibitors are mixed into the material during fabrication. Painting the material can slow damage when it is exposed to the sun.

AFCI: Arc fault circuit interrupter. AFCIs are newly-developed electrical devices designed to protect against fires caused by damaged or deteriorated wiring or cords in the home electrical wiring.

Air Conditioner: An electrical appliance used to cool the interior of a building by means of a refrigeration condenser. The condenser is typically located outdoors and consists of a compressor, a fan and "finned" radiator coils. This is normally connected to an evaporator unit located in the coil box on the forced air heating system with piping and charged with a refrigerant gas. The refrigerant is then pumped from the condenser unit to the evaporator unit and the blower for the heating unit circulates the air throughout the interior.

Air Admittance Valve: Pressure-activated, one-way mechanical valves that are used in a plumbing drain, waste, and vent (DWV) system in place of conventional, through-the-roof, pipe venting. Normally closed, AAVs open when wastewater discharges, allowing air to circulate for proper drainage. When closed, AAVs prevent the escape of sewer gas and maintain the trap seal.

Air Gap: An anti siphon device typically installed on a dishwasher drain to prevent sink drain water from contaminating the dishwasher. The air gap is usually a vented cap located adjacent the sink faucet, and is connected in-line between the dishwasher and the sink drain or garbage disposal.

Amp: Abbreviation for Ampere. The base unit of electric current. The rate at which electricity is used.

Anchor Bolt: A bolt used to secure the mudsill to the foundation. Modern anchor bolts are "L" or "J" shaped rods, which are threaded on one end. During construction, these bolts are inserted into the top of the foundation as the concrete is poured. The mudsill is secured to the foundation with washers and nuts after the concrete has partially cured. When a home does not have bolts, anchors can be "retrofitted" into existing foundations as a part of seismic upgrading, with mechanical or epoxied anchors, as long as the concrete is in good condition. The primary intent of seismic upgrading is to prevent the wood frame of the structure from moving off of the foundation and to limit the structural damage caused by an earthquake.

Angle Stop: A valve used to shut off the flow of water to a plumbing fixture such as a sink or toilet. Older angle stops often have aged washers and packing, and can leak around the valve stem. These valves should be opened and closed annually to keep the valve stem and packing in good condition. Valves should be reviewed periodically for leaking. Leaking valves can be re packed or replaced.

Anti Siphon Device: A valve installed on piping designed to prevent cross contamination of the potable water by providing a separation in the system. These devices are typically installed on exterior hose and irrigation plumbing. In residential construction, these valves are integral with commercially available sprinkler valves and are also installed on exterior hose bibs.

Balloon Framing: Type of construction in which the studs are continuous from the foundation to the roof. Mid level floors are inserted after the exterior walls are raised. This type of construction is more common to the eastern half of the United States.

Barge Rafter: The exposed (sometimes decorative) rafter at a gable end.

BTU: (British Thermal Unit) Amount of heat energy needed to raise one pound of water one degree Fahrenheit. The more heat energy needed, the higher the BTU input rating. Most household gas fired heating appliances, such as furnaces and water heaters are designed for input ratings in the tens of thousands of BTUs per hour.

Buss Bar: Metal bars in an electrical circuit panel box, which are used to distribute the electrical current from the mains to the circuit breakers or fuses.

Check Valve: A one-way valve installed to prevent water from flowing the wrong way through a pipe.

Circuit: Electrical conductors and components through which current from a power source flows.

Circuit Breaker: An electrical device used to protect electrical conductors and equipment from damage should the current exceed a maximum value (measured in Amperes). The circuit breaker interrupts the circuit by means of an electromagnet that separates contacts if the current reaches, or exceeds, a specific value. The major advantage of circuit breakers over fuses is the ability to be reset should the breaker "trip". As springs can become worn in older circuit breakers, this value can decrease and "tripping" becomes more frequent. Replacement of older circuit breakers eventually becomes necessary.

Conductor: A wire capable of carrying an electrical current. Generally, copper or aluminum.

Conduit: A metal or plastic pipe, which is used to enclose and protect the conductors from damage.

Convenience Receptacle Outlet: A receptacle outlet that is not intended for a specific (permanent or semi permanent) appliance.

CPVC: (Chlorinated Polyvinyl Chloride) An off-white or buff colored piping. This material is commonly used as water supply piping in mobile and manufactured homes.

Creosote: A by-product given off when wood burns. Creosote collects on the walls of the chimney flue. This material is combustible and, if sufficient amounts build up, can ignite in the flue. Wood burning fireplaces, or stoves, and flues should be periodically cleaned by a qualified chimney sweep. Frequency of cleaning depends on the type of wood burned and how often the fireplace is used. If a wood-burning stove is used as a primary source of heat, the flue and appliance should be cleaned and inspected annually.

Cripple Wall: Short wood framed walls constructed between the foundation and the floor system, sometimes referred to as a "pony" wall. Commonly found in structures built on sloped lots and in older buildings.

Dead Front Panel: A metal panel, installed at the front of an electrical circuit breaker or fuse panel box. This panel covers the electrical buss bars, wiring and connections inside the panel box to prevent accidental contact with energized electrical systems.

Dedicated Outlet: An electrical outlet that has a specific use or is connected to a specific appliance. Furnaces, dishwashers and electric dryers, along with other major appliances, are typically connected to dedicated outlets.

Ducting: A tube, typically fabricated of metal or plastic, through which air is distributed to heat or cool a building.

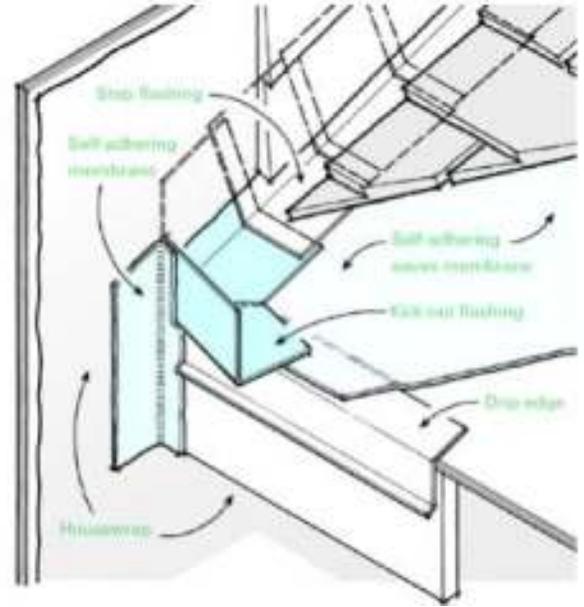
Efflorescence: White "fuzzy" mineral build-up, typically found on unglazed tile or masonry, caused by moisture leaching minerals out of the masonry.

Eave: The bottom, horizontal edge of the roof.

Equipment Grounding Conductor: The grounding conductor/wire that is attached to a device (such as a receptacle outlet, light fixture or other electrical device) and to the grounding terminal block in the circuit breaker or fuse panel.

Fire Wall: A wall designed to slow the spread of a fire from one area to another. In residential construction, the wall between the garage and the house is technically not a fire wall, but is generally accepted that the intent is to slow the spread of a fire from the house to the garage. Modern multi family dwellings such as apartments and condominiums will also have a firewall between residential units. This usually consists of 5/8", type "X" wallboard with all seams and openings sealed. Commercial buildings have much more stringent standards for fire walls. Doors through firewalls are fire rated or solid core with a device that will automatically close the door.

Flashing: A sheet metal or waterproof membrane used to direct water away from vulnerable areas such as roof penetrations, roof valleys, chimneys, as well as around windows and doors in walls.



Footing: The lowest part of the foundation. Has the sole purpose of transmitting the structural loads of the structure to the earth. "Spread" footings resemble an inverted "T" and distribute the loads over a larger area of soil. Other types of footings will provide support for retaining walls, bridges, etc.

Foundation: Provides the support for the structure. Foundations are typically masonry and can be block or poured concrete

Framing: The structural "skeleton" of a building. Typically wood lumber is used in most residential construction. However, metal is also used occasionally in home construction.

Fuse: An electrical device used to protect electrical conductors and equipment from damage should the current exceed a maximum value (measured in Amperes). When excessive current is run through a fuse, the metal conductor in the fuse melts and opens the circuit. Unlike circuit breakers, fuses cannot be reset. Care should be taken not to install a fuse with an amperage rating higher than the one being replaced.

Gable: The vertical triangular end of a roof from eaves to ridge. Also, the type or design of a roof that has gable ends.

Gambrel: Type of roof with two slopes. The steeper slope is found above the eaves and the shallower slope is found below the ridge. This type of roof is most commonly associated with barns, but is also found in residential construction.

GFCI Device: Also known as a Ground Fault Interrupter or Ground Fault Circuit Interrupter (GFCI). GFCI devices are required for convenience outlets in new residential construction at locations that are near water sources. These areas include kitchens, bathrooms, near sinks, in garages and at exterior locations, as well as to whirlpool tubs and pools. GFCI devices are designed to interrupt (turn off) power to specific protected outlets if an imbalance or short circuit occurs. One device will often be wired so that it protects more than one outlet in a given circuit. The reset will be located either at the device or at the circuit breaker in the electrical panel. If an outlet in one of these areas does not function, the cause can often be traced to a "tripped" GFCI device. Resetting the device should restore power to the affected outlet. If this does not, the problem may be a defective appliance or GFCI device.

Girder: A beam used in the support of a floor. Sizes typically range from 4x6 to 6x12, depending on the load and span of the girder. However, the most common sizes used are 4x6 and 4x8. Some types of construction utilize girders as the primary floor support with thick (1 1/16" - 1 1/2") sub floor sheathing. Girders can be solid wood, laminated wood or metal.

Glazing Compound: Soft, putty-like material used to hold a glass pane in a wood window sash. This material hardens over time and will fall out, necessitating periodic re-glazing.

Grade: The top surface of the soil. Also may refer to the slope of the top surface of the soil.

Ground: A conductor that attaches the electrical system to the earth. In modern residential construction, a wire that is embedded in the concrete foundation at the time of construction provides ground. This "ufer" ground is then attached to the ground attachment in the main electrical panel. As this wire is encased in concrete, this type of ground is not visible for inspection. Ground can also be provided by driving an approved "ground rod" into the earth. The metal water and gas supply pipes are also "bonded" to the ground system to provide a direct path to earth for any electrical current.

Grounding Electrode: The point at which the electrical system is attached to the earth (grounded). Typically provided by a ground rod or concrete encased electrode (Ufer).

Grounding Electrode Conductor: The conductor/wire that attaches the electrical service to the grounding electrode.

Gutter: A trough installed at the eaves to intercept and re direct rainwater.

Half Hot Outlet: One of the receptacles in a "half hot" outlet is wired to a switch and the other is always "hot" allowing two different appliances to be plugged in.

Hip: The diagonal intersection between two connecting planes of a roof that extends from the ridge to an outside corner of an exterior wall. Also, the type or design of a roof that has hips instead of gables at outside corners.

Heat Pump: This is an electrically powered appliance used to heat or cool the interior of a building. A refrigerant gas is distributed through a closed loop between a compressor and an evaporator. Heat is generated during the compression cycle and the gas is distributed to a finned radiator. The gas then is allowed to expand in the evaporator. This part of the process significantly cools down the gas and it is distributed to another finned radiator where it can absorb heat energy. The direction of the gas is determined by the need for heating or cooling of the interior.

HVA/C: Heating, Ventilation and Air Conditioning.

I Joist: Manufactured wood joist that resembles a capital "I" in cross section. Using principles similar to "I-Beams", this structural member can be constructed of a combination of solid wood, plywood and/or wafer board, and is marketed by a variety of manufacturers.

Jamb: The frame that encloses a window or door.

Joist: Structural framing member installed horizontally on edge and used to support floors and/or ceilings.

Laminated Veneer Lumber: (LVL) Similar to plywood except that the layers of veneer are generally parallel to each other instead of perpendicular.

Mansard: Type or design of a roof with two slopes and usually two types of roof membrane. A steeply sloped section (often nearly vertical) of roof is located at the perimeter of the structure that is primarily decorative, and a low-sloped (often nearly flat) section that typically provides the roof for the majority of the building. Most commonly found on commercial buildings, but also associated with some types of Victorian architecture.

Moment Frame: Steel moment frames generally consist of beams and columns joined by a combination of welding and bolting. They are designed to resist lateral loads through bending of the frame elements.

Mud Sill: Typically, a 2x4 or 2x6 pressure treated or redwood board which is installed between the foundation and the wood frame of the structure.

P-Trap: "U" shaped drain fitting found under a sink, shower or bathtub. The p-trap for a toilet is formed into the porcelain bowl. This provides a water "weir" that prevents sewer gases from venting into the interior of the building.

Parging: A sand and cement mortar plaster coating typically applied to masonry.

Particleboard: Manufactured wood construction material consisting of small chunks of wood glued together to form a solid sheet. Typically used in cabinets and as a base for resilient flooring.

Pilot Light: Also known as a "standing pilot". A continuously burning gas flame used to ignite a burner on a gas appliance, such as a water heater, furnace or range/oven.

Platform Framing: Type of construction in which the wall studs for each story rest on the floor framing system (platform) and the wall studs are the height of each story. This type of construction is more common in the western half of the country.

Plenum: A large metal box connected to the heater to which the ducting is attached.

Plywood: Manufactured wood construction material consisting of layers of veneer glued together with adjacent layers alternating at right angles in relation to each other to form a solid sheet. Commonly used for structural floor, roof and wall sheathing. Common thickness ranges from 1/8" to 1 1/4".

PVC Piping: (Polyvinyl Chloride) Plastic pipe used for water supply, sewer and electrical conduit. The most common use for this piping in residential construction in the western part of the country is sprinkler piping. Also used for main municipal water supply and private well installations. This material is subject to ultraviolet breakdown unless inhibitors are mixed into the material during fabrication. Painting the material can slow damage from the sun.

Rafter: Structural roof framing member typically installed at an incline to provide the slope for the roof.

Rafter Tail: The projecting section of a rafter between the exterior wall and the eave.

Return Air: A furnace duct through which the interior air is returned to the furnace to be heated (or cooled) and then distributed to the interior through the distribution ducting.

Ridge: The horizontal line of intersection at the peak connecting two planes of a roof.

Romex: A brand name for a non-metallic sheathed electrical cable. This is a plastic sheathed electrical cable used in residential construction to provide electrical power to outlets, switches and appliances.

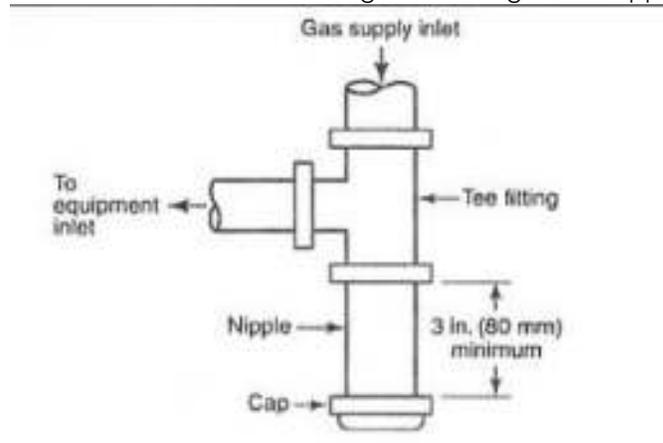
Roof: The structural, and rain proof cover of a building.

Roof Pitch: The incline slope of a roof or the ratio of the total rise to the total width of a house, i.e., a 6-foot rise and 24-foot width is a one-fourth pitch roof.

Roof Slope: The incline slope of a roof. Usually defined in number of inches of rise (vertical) per foot (12 inches) of run (horizontal). i.e., a 4 in 12 slope rises 4 inches per 1 foot of horizontal run.

Sash: The part of a window frame that holds the glass.

Sediment Trap: A short, downward projecting, capped section of pipe that should be located adjacent to a gas fired appliance, typically after the gas shutoff valve and as close to the appliance as practical. The intent is to provide a depository for any loose particles or debris that might be present in the gas piping system before the debris has a chance to clog or foul the gas fired appliance.



Seismic Upgrades: Retrofitted metal hardware and lumber materials added to the structure of a home, typically in and around the foundation area. These can include, but are not limited to: Anchor bolts, used to secure the mud sill to the foundation; framing anchors (such as A-35s), used to secure a wood floor framing system to the mud sill; and shear wall panels (typically plywood or wafer board) which add lateral strength to stud framed walls.

Service Entrance Conductors: The portion of the overhead service conductors which connect the service drop to the service equipment. Typically the responsibility of the homeowner.

Service Equipment: The necessary electrical equipment, usually consisting of circuit breakers or fuses and their accessories, connected to the load end of service conductors to a building or other structure, or an otherwise designated area, and intended to constitute the main control and cutoff for the electrical service. Often referred to as the "main electrical panel", this is the panel where the grounding occurs and is generally where the main disconnect can be found. Usually located at or adjacent to the electric meter.

Service Drop: The portion of overhead service conductors between the pole and the first point of attachment to the building. Typically the property of the utility company.

Shake: Similar to a wood shingle except that shakes are split while shingles are cut. Splitting results in a non-uniform wedge. However, shakes are typically thicker than wood shingles and therefore tend to last longer as a roofing material. Shakes are installed in a manner similar to wood shingles with successive courses overlapping the seams between the previous shakes. Due to the nature of the material, uneven wear of a shake roof is common. Periodic replacement of damaged or worn shakes is a necessary part of home maintenance.

Shear: In construction, this refers to a sideways or lateral movement. i.e., A shear wall or shear panel is designed to resist sideways movement.

Shear Wall: Also known as a shear panel. An engineered wall designed to resist lateral movement caused by earthquakes and/or high winds. Typically, a wood framed wall is sheathed with plywood or wafer board and nailed with a specific nail spacing to provide this strength. Manufactured shear wall systems are also available. A shear wall is usually connected to the foundation with special "hold down" anchors that are embedded in the foundation.

Sheathing: Wood member used to cover a floor, wall or roof surface. The most common materials used for sheathing in modern construction are plywood and wafer board (OSB).

Siding: Exterior wall covering. Can consist of a variety of materials such as wood, plastic, metal or masonry.

Shingle: Thin, tapered pieces of overlapping building material used to cover a roof or a wall. Shingles are installed in rows or "courses" and overlapped so that vertical seams are covered by successive rows of shingles. The most common type of roofing shingle in residential construction is the composition shingle, also called the asphalt shingle. Wood shingles are more common as an exterior wall siding material but are sometimes still found on roofs. Wood shakes which are thicker and more irregular than shingles are also used as a roofing material.

Stain: A pigmented finish applied to wood siding and trim to help protect it from the weather while still allowing the character of the wood to be seen. Stains applied to exterior woodwork typically do not last as long as paint and, therefore, require more frequent application. Stains come in "transparent" and "full bodied", with the latter having more pigment and binders.

Stop: The raised section of a jamb against which a door or window closes.

Stud: Structural framing member installed vertically to form interior and exterior walls. A typical 2x4 stud measures 1½" x 3½" x 92¼".

Swale: A trench or gutter typically installed at grade level to intercept surface water runoff from a hill.

Truss: Engineered and manufactured support members typically used for roof systems instead of rafters and ceiling joists; however, they can be used as floor joists. The long, outer perimeter sections of lumber are referred to as "chord" members while the shorter interior sections are referred to as "web" members.

Valley: The diagonal intersection between two connecting planes of a roof that extends from the ridge to an inside corner of an exterior wall.

Valve: A mechanical device used to start, stop or regulate the flow of gas or water.

Volt: The "potential" of electricity. Analogous to pressure when measuring the potential of water.

Wafer board: Manufactured wood construction material consisting of wood chips that are glued together to form a solid sheet. Also known as "oriented strand board" (OSB). Commonly used for structural floor, roof and wall sheathing as well as exterior siding.

Wall Board: Also known by the trade names "Drywall" and "Sheetrock", this is a gypsum material sandwiched between paper skins to form an interior wall surface that is affixed to the wall studs and ceiling joists with the use of screws or nails. The seams are then covered with a paper or fiberglass reinforcing tape and smoothed with vinyl joint compound.

Watt: The amount of electricity used. Voltage multiplied by amperage equals wattage.

Weir: The water seal that remains in the bend of a p-trap. The intent of the weir is to prevent sewer gases from venting into the interior of the house.

Additional construction related definitions can be obtained at:

<http://www.constructioninfoexchange.com/constructiondictionary.aspx>