

ASSESSOR'S MAP 52

Code Area No.13-000

(A) Map of the Colby Tr. ct.

(B) P.M. 8272 274/64-65

Scale 1 in = 50 ft.

1563
Pg. 2

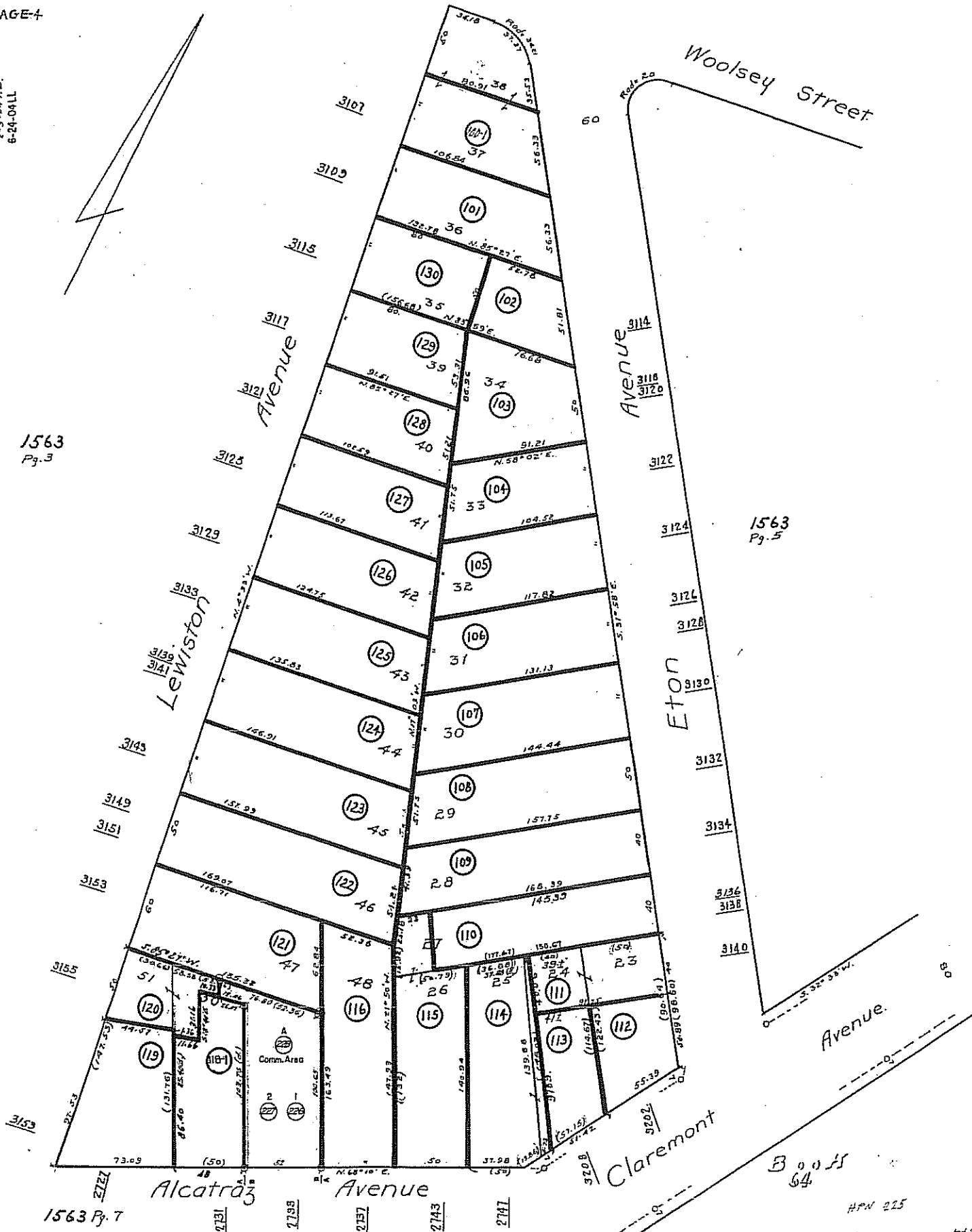
1563

PAGE 4

15-27-58 E.L.
11-18-69 H.M.
7-3-04 R.D.
6-24-04 LL

1563
Pg. 3

1563
Pg. 5



1563 Pg. 7

HPN 225

ASSESSOR'S MAP 52

Code Area No. 13-000

1563

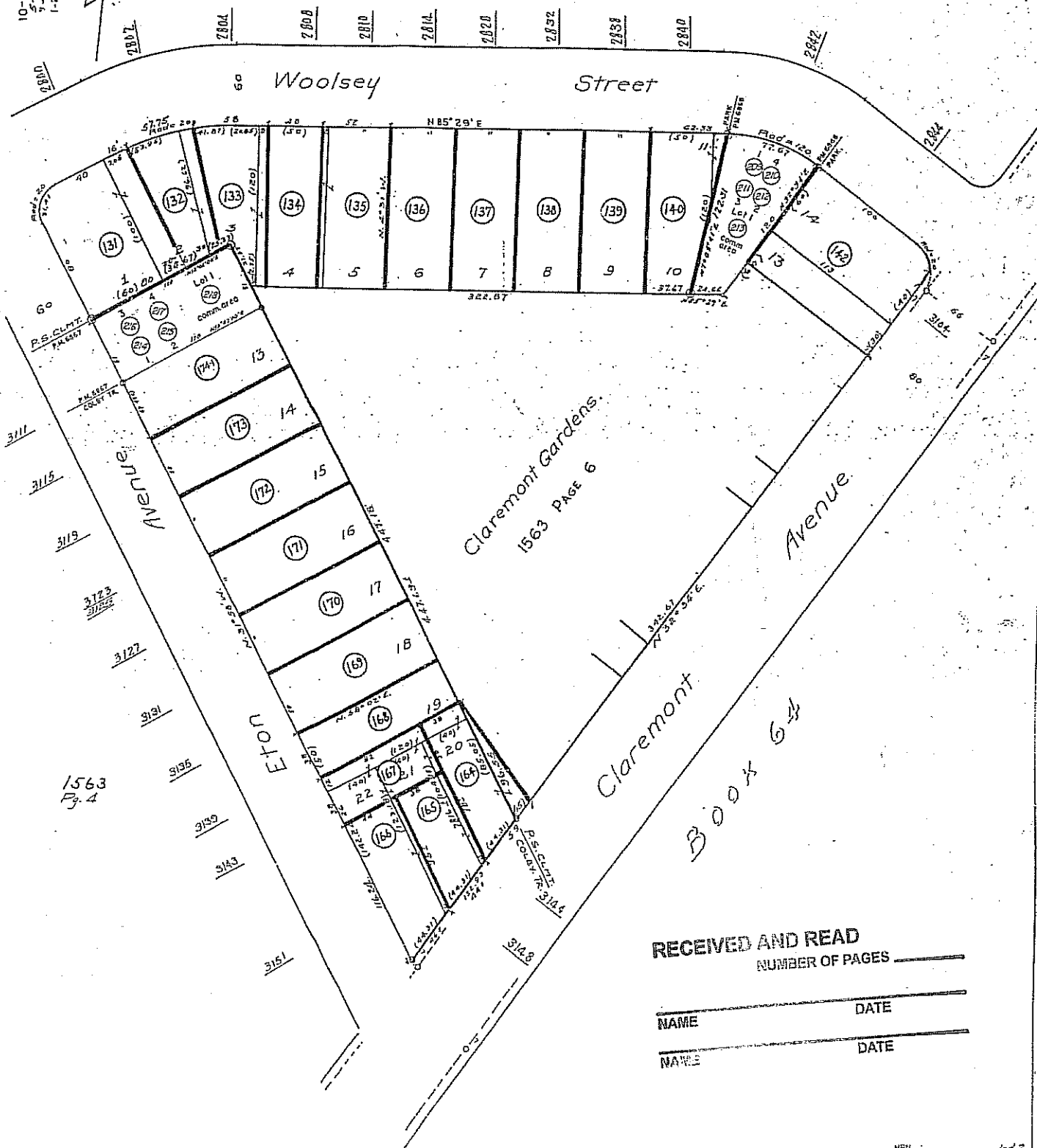
Park Side Claremont. (Bk. 21 Pg. 33)
Map of the Colby Tract. (Bk. 19 Pg. 76)
 Scale 1 in = 60 ft.

P.M. 6868 225/11
 P.M. 6867 225/11

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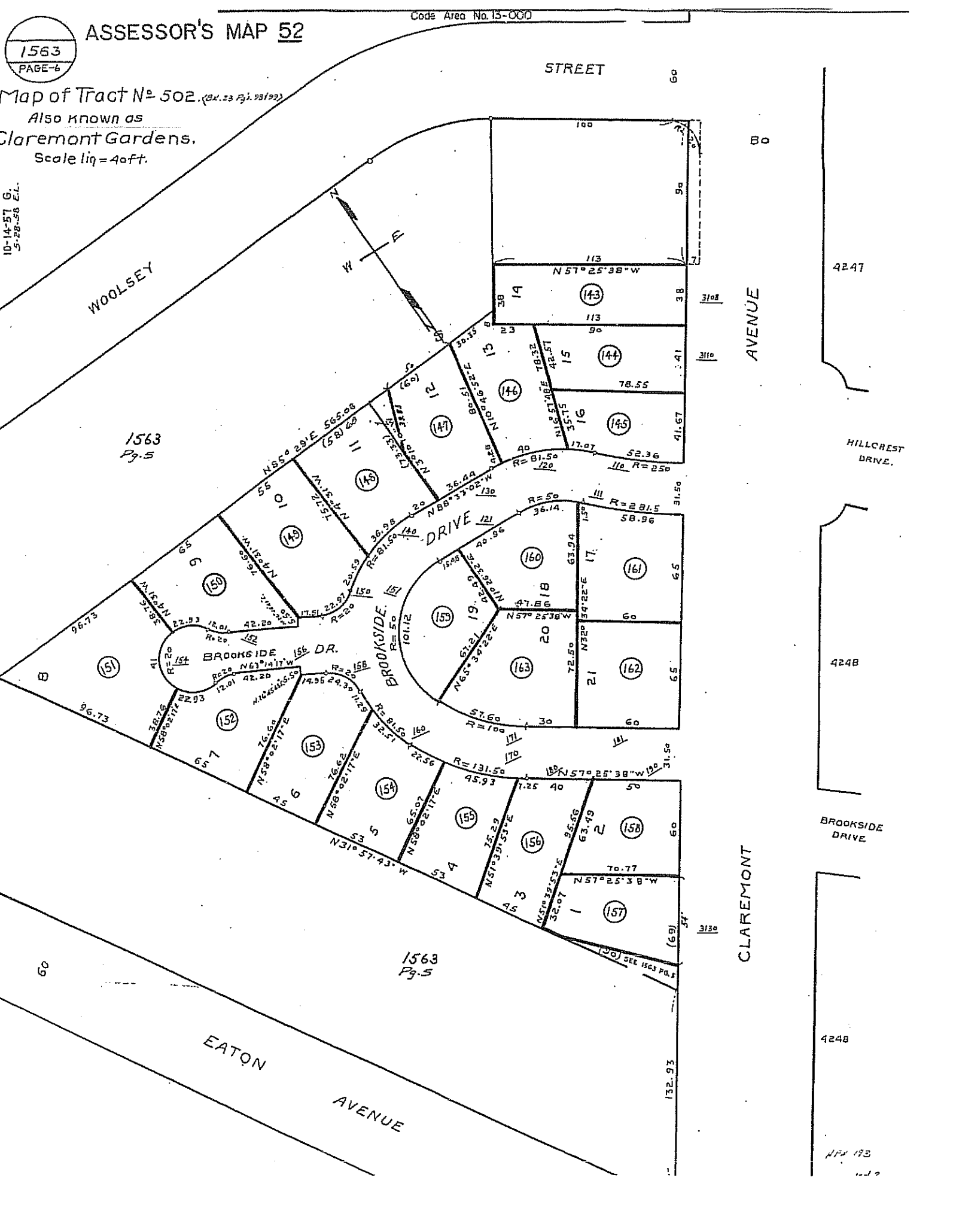
10-14-57 G.
 5-27-58 E.L.
 9-24-56 H.S.
 1-27-57 W.L.

1563



Map of Tract N^o 502. (24, 23 P^gs. 98/99)
Also known as
Claremont Gardens.
Scale 1 in = 40 ft.

10-14-57 G.
5-28-58 E.L.



Code Area No. 13-000

Code Area No. 13-000

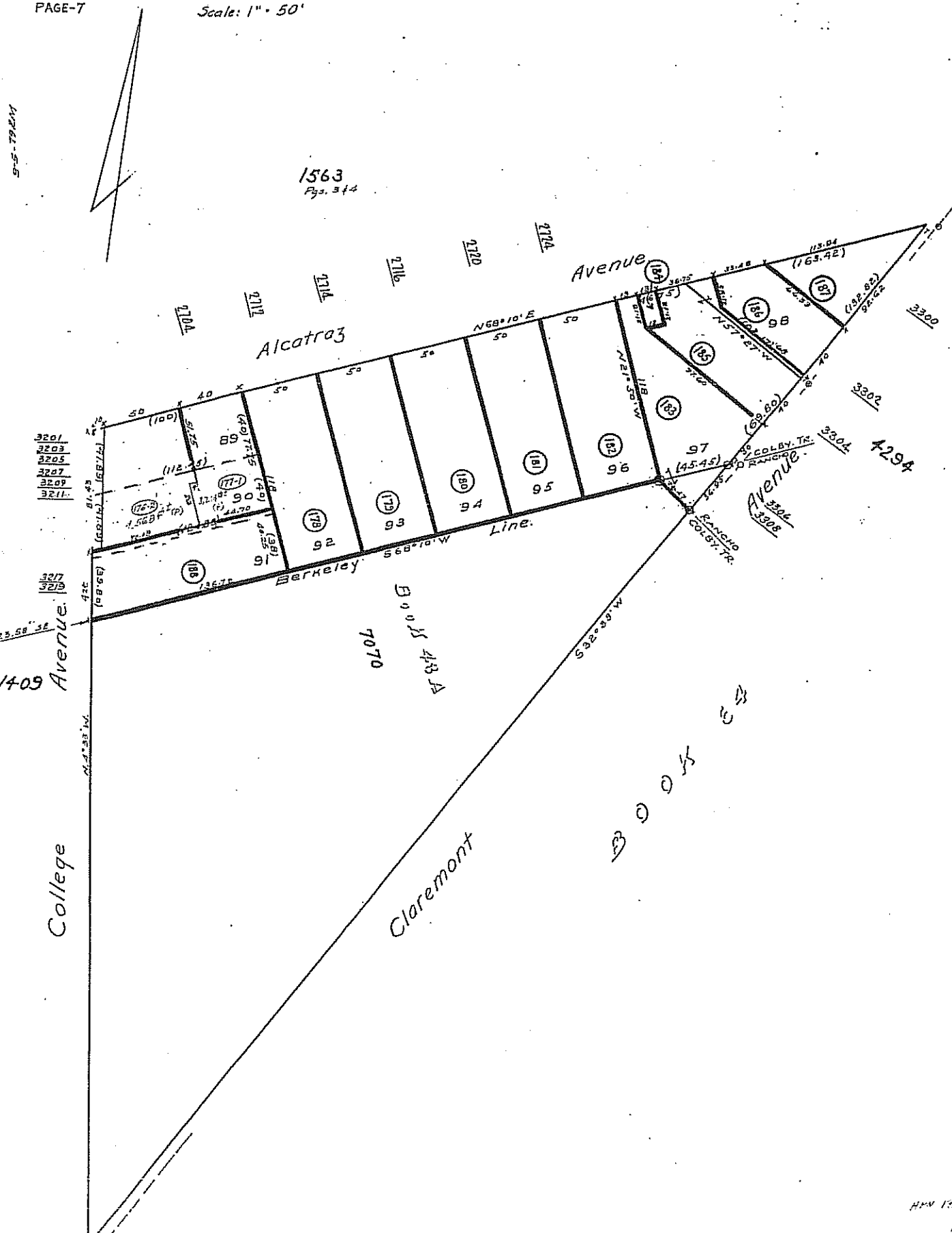
1563

Map of the Colby Tract. (BK. 13 Pg. 76)

Map of the Ranches of U.F.D. Peralta - Vicente Peralta Reserve (BK.17 Pg.12)

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Scale: 1" = 50'



SHEET 1
of
3 SHEETS

State of California

County of Alameda

City of Alameda

County of Alameda

IN 1931

County of Alameda

County of Alameda

County of Alameda

County of Alameda

County of Alameda

County of Alameda

State of California

County of Alameda

City of Alameda

County of Alameda

IN 1931

County of Alameda

County of Alameda

County of Alameda

County of Alameda

Map of
TRACT NO. 502
Also known as
CLAREMONT GARDENS
1931

SURVEYED BY
J. H. PIATT,
Lic. No. 5740
No. 100

SHEET 2
of
3 SHEETS

State of California

County of Alameda

City of Alameda

County of Alameda

Map of
TRACT NO. 502
 Also known as
CLAREMONT GARDENS
 1931

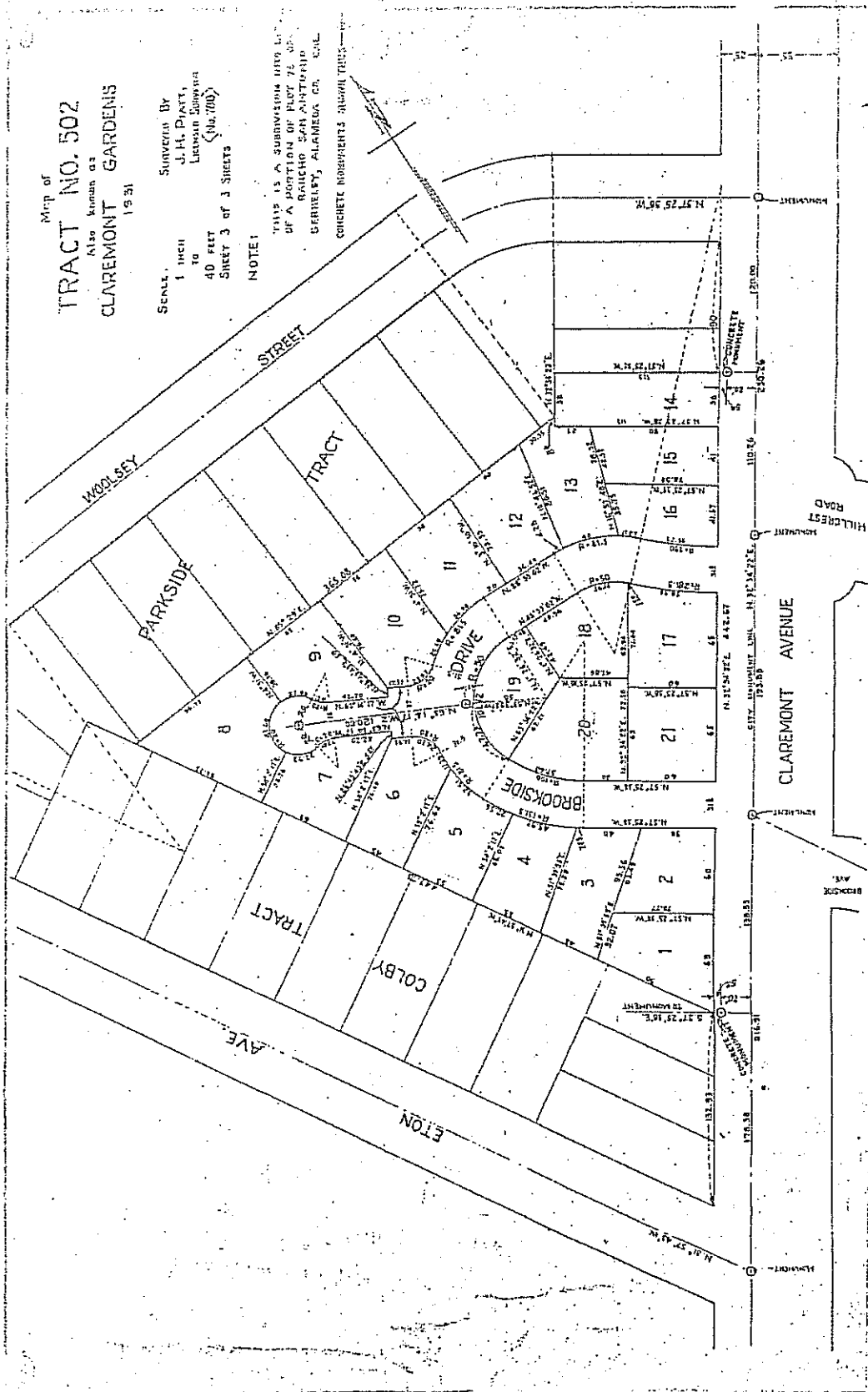
SCALE: 1 INCH
 TO
 40 FEET
 SHEET 3 OF 3 SHEETS

SURVEYED BY
 J. H. PIATT,
 Licensed Surveyor
 (No. 700)

NOTE:

THIS IS A SUBDIVISION INTO LOTS
 OF A PORTION OF LOT 72 OF
 RANCHO SAN ANTONIO
 GERMELLY, ALAMEDA CO., CAL.

CONCRETE MONUMENTS SHOWN THERE—



COPY

STAR INSPECTION GROUP

OAKLAND, CA 94602
(800) 698-0292 - Fax: (510) 482-8485
www.stargroup.com

This report is CONFIDENTIAL.
It was prepared for the below-named
and is not intended for use by any other person.

181 Brookside Drive
Berkeley, California
July 30, 2002 - 2:30 p.m.
Report Number 30399

I/We have read, understand, approve
& acknowledge receipt of this report
consisting of pages thru

Signature: [Signature] Date: 8/10/02
Signature: [Signature] Date: []

This Report Prepared for:
Dr. Flavia Nobay and Dr. David Adler

Inspected by Bill Londagin
Member: International Conference of Building Officials

RECEIVED AND READ

NUMBER OF PAGES 51

NAME DATE

NAME DATE

FOR OTHER THAN THE ABOVE-NAMED:

If you are not named above and wish to use this report, we strongly urge that you retain Star Inspection Group or another qualified inspection firm for an on-site review of this building and report. This report is based on information obtained at the site. With time, conditions change and the information may no longer be accurate. We will return and review the building and report with any interested party for an amount equal to 50% of the total fee paid for this inspection with a minimum of \$300. This offer is good for 6 months from the date of inspection, after which a complete reinspection should be performed.

This inspection was performed and this report produced according to the limitations and exclusions specified in the enclosed contract. In this contract our liability is limited to twice the cost of the inspection. Star Inspection Group will, upon request, perform an inspection without this limit on liability for an additional fee.

Star Inspection Group Basic Checklist Reporting System

Our reporting system is designed to provide you with easy access to your inspection information. The report focuses on the functionality of the building's primary systems and components as required in the Standards of Practice of both principal state and national home inspection associations: the American Society of Home Inspectors (ASHI) and the California Real Estate Inspection Association (CREIA).

Please, look for one of the symbols below in each ☐ box for a quick overview of this building's systems and components:

- ✓ = The item appears serviceable with no visible indications that it is significantly deficient.
- ± = The item needs minor repair or attention.
- X = The item is significantly defective, or near the end of its service life. We recommend review by a qualified contractor and repair, replacement, or removal as appropriate.
- = The item was not present, or was present and was not inspected.

Also, look for these abbreviations to indicate a condition or recommendation:

- | | |
|---------------------|-------------------------|
| NC = New | NF = Nonfunctional |
| RN = Relatively new | R = Recommend |
| MN = Minor Wear | EC = Engineer |
| MD = Moderate Wear | PE = Refer to Pest Firm |
| GW = Generally Worn | RS = Replace Soon |
| PC = Poor | |

We prefer to have our clients present during the inspection, especially for the last hour. Information provided by the inspector at the site may be vital to your understanding of our report. Please call us if you were unable to attend and we will arrange a verbal consultation with the inspector.

This report is a general overview of the structural components and major systems. This report is not intended to be technically exhaustive in any field. If further information is desired we recommend specialists in the relevant fields be retained to perform additional inspections. An examination of every window, door, light switch, outlet, water valve, etc., was not made. This report does not include items or conditions undisclosed by functional operation or visual inspection.

Areas obscured by furnishings are not accessible to inspection. These areas should be examined after the furnishings have been removed.

This report was prepared for those who have initialed and signed the enclosed inspection contract only and is not intended for use by any other person. The enclosed Inspection Order and Contract states specific exclusions and limitations of our liability. **If your signature is not on this contract and you wish to use or rely on this report, we strongly urge that you retain the Star Inspection Group or another qualified inspection firm for an on-site review of this building.** We will return and review the building and report for an additional fee upon request.

A determination as to the presence of animal pests, rodents, termites, decay, or other wood destroying organisms is beyond the scope of this inspection. We recommend a qualified pest control firm be contacted with any questions concerning the presence or treatment of these organisms. We are not qualified in these fields. We recommend periodic examinations be made by a licensed pest control firm as part of routine property maintenance.

We may make recommendations or suggestions in this report which differ from requirements by the local building department. For determinations as to what is permitted or required in this jurisdiction, the local building department should be consulted.

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Visit our web site at www.stargroup.com for valuable consumer information.

PROPERTY DESCRIPTION

Type: Single Family House Townhouse Apartment Condo 2 Stories
Weather: Clear Cloudy Rain Today Recent Rain Snow Described from: Front Door Street _____
Slope: Relatively Level Minor Moderate Steep Site Slopes Down to: _____
Furnished, Defects May Be Obscured¹⁰ Unfurnished Additions / Modifications, Contact Building Department¹¹ _____
New Construction Utilities Off¹² Gas Electric Water

EXTERIOR

- ☒ Siding: Stucco All Sides & Rear Front Loc: _____ Cond: MAV
About Stucco¹³ Stucco Test Openings¹⁴ Common Cracks Large Cracks Previous Stucco Crack Repairs¹⁵ _____
☐ Siding: Plywood Wood Board Shingles Brick Loc: _____ Cond: _____
Insufficient Plywood Nailing¹⁶ Plywood Buckling Soft Mortar _____
☒ Siding: Wood Composite¹⁸ _____
Vinyl Aluminum Asbestos¹⁹ Loc: _____ Cond: _____
Holes Gaps Damage Finish Worn Peeling Paint Appears Recently Painted
Wood-Soll Contact²⁰ _____ Moisture-Related Damage²¹ _____
Embedded Siding / Trim²² _____ Improper Flashing²³ _____
Remove Firewood²⁴ Remove Plants / Trees from Building²⁵ Plants Obscure Access²⁸ Large Trees, Consult Specialist
☒ Trim: ²⁷ Gaps Cracks Peeling Paint Needs Caulking Loose Damaged
☒ Exterior Doors / Windows: Peeling Paint Damage Threshold: Worn Damaged Improper _____
☒ Eaves/Soffits/Fascia: ²⁸ Stains Peeling Paint Damage Unvented Soffits²⁹ Exposed Beams³⁰ _____

PORCHES, STAIRS, DECKS, BALCONIES

- ☒ Porch / Stairs / Deck / Balcony: BRICK Loc: FRONT Cond: MD; A
☒ Porch / Stairs / Deck / Balcony: WOOD Loc: REAR Cond: MN
☒ Porch / Stairs / Deck / Balcony: WOOD Loc: APPROX GARDEN Cond: PN
☐ Porch / Stoop / Stairs / Deck: _____ Loc: _____ Cond: _____
A: Concrete-Tile-Brick on Wood Framing³¹ B: Limited or No Access C: No Proper Ledger Flashing³² D: Coating Damaged³³
E: Settling³⁴ F: Separation G: Wood-Soll Contact³⁵ H: Damaged Decking & Framing J: Reinforce Framing
K: Painted Walking Surfaces³⁶ L: Piers without Footings³⁷ M: Deck on Grade³⁸ N: Deck Maintenance³⁹
P: Tight Spacing R: No Secondary Drain⁴⁰ S: Steps Uneven⁴¹ T: Posts/Columns Damaged
☒ Guardrails: ⁴² Missing _____ Low _____
Loose _____ Large Openings _____
☒ Handrails: ⁴³ Missing _____ Low _____
Loose _____ Large Openings _____ Improper Grip _____

GRADING AND DRAINAGE

☒ Grading: Faulty-Marginal Grade ⁴⁴

Improper Slope ⁴⁵

Exposed Soil ⁴⁷

Low Foundation Vents ⁴⁶

Steep Slope ⁴⁸

Site Erosion ⁵⁰

Has Surface Drains ⁵²

☒ Drainage: Signs of Poor Drainage ⁴⁹

Drainage System Added ⁵¹

Driveway Drains towards Garage ⁵³

Garage Floor: Wet Stained Dry

WALKING SURFACES (Hardscaping)

☒ Driveway: Concrete Asphalt Gravel

Loc: LEFT

Cond: MD: A

☒ Walks: STONE AND CONCRETE

ALL

MD: D, B

☒ Patios: CONCRETE

REAR

MIN

A: Common Cracks

B: Large Cracks

C: Damaged

D: Uneven / Trip Hazards

Decorative Pond ⁵⁴

Recessed Trash Bin, Caution ^{54.1}

Wood Dividers Damaged / Raised ⁵⁵

Painted Surfaces, Slippery when Wet ⁵⁶

RETAINING WALLS

☐ Loc:

A: Cracks ⁵⁷

B: Displacement ⁵⁸

Minor Moderate Major

☐ Loc:

C: Weod. ⁵⁹

D: Damaged

FENCES, GATES, GARDEN WALLS

☒ Fencing:

☒ Gate(s): METAL

Garden Walls: Masonry Stucco

A: Obscured by Plants B: Leans C: Loose D: Damaged

PATIO COVERS

☒ Patio Covers: Loc: REAR

Cond: MAI

Not Properly Secured at: Building / Roof

Needs Bracing

Damaged

Repair / Replace / Remove

Garden Structures: Detached Shed

Play Equipment

Not Inspected

POOL SPA

☐ Pool Loc: Cond:

☐ Spa Loc: Cond:

☐ Fencing: Inadequate Too Low Incomplete Upgrade Barriers ⁶⁰

☐ Gate Self-Closer None Improper Nonfunctional

☐ Concrete Pool Deck Coping Needs Caulking Common Cracks

Large Cracks

Trip Hazards

☐ Pool / Spa Equipment Loc: Cond:

Needs GFCI

Improper Wiring

Not Bonded ⁶¹

Heater Off

Heater Vent Close to Wood ⁶²

Piping Leaks

Gas Connector: Improper Outdated

Rx Servicing & Evaluation

ROOF SURFACES

☒ Type: _____ Loc: _____
 Cond: _____
 Access: Walked on Roof Surface Restricted: Slippery Steep High Easily Damaged Not Accessible Rx Closer Inspection

☐ Type: _____ Loc: _____
 Cond: _____
 Access: Walked on Roof Surface Restricted: Slippery Steep High Easily Damaged Not Accessible Rx Closer Inspection

☐ Type: _____ Loc: _____
 Cond: _____
 Access: Walked on Roof Surface Restricted: Slippery Steep High Easily Damaged Not Accessible Rx Closer Inspection

A: Exposed Fasteners⁶³ B: Popping Nails⁶⁴ C: Pitch Too Low⁶⁵ D: 3-Layers of Roofing⁶⁶ E: Comp Shingles w/o Felt⁶⁷
 F: Wood Roofing⁶⁸ G: Shake Repair⁶⁹ H: Remove Debris⁷⁰ I: Tile Underlayment⁷¹ J: Tile w/o Underlayment⁷²
 K: Built-Up Roofing⁷³ L: Blisters⁷⁴ M: Ponding⁷⁵ N: Exposed Membrane⁷⁶ P: Coating Worn⁷⁷
 Q: Patching⁷⁸ R: Moss Growth⁷⁹ S: Trim Trees - Plants T: Near End of Life⁸⁰
 U: Roofing Improper/Nonstandard⁸¹ V: Damaged Wood Shingles at Edges⁸²

ROOF FLASHINGS

☒ FLASHINGS Mostly Inaccessible Piping Penetrations: Need Sealing Improper _____
 Roof-Wall Connections: Need Sealing Improper _____
 Mastic over Stucco⁸³ Stucco over Flashings⁸⁴ Insufficient Siding-Roof Separation⁸⁵
 Chimney Flashings: Need Sealing Improper Cricket Needed⁸⁶ _____
 Valleys: Center-Cut Valley⁸⁷ Nonstandard⁸⁸ _____
 Edges: Exposed Sheathing⁸⁹ Moss Growth⁹⁰ Loose Edge Metal Water Flows over Edge Metal⁹¹ _____
 Rusty Flashings⁹² Separations⁹³ Mastic Used⁹⁴ Mastic Worn
 Stucco Topped Parapets⁹⁵ Debris Traps⁹⁶ Flashings Need Sealing
☐ Skylights: _____ Cracked Loose Flashings Improper Low Curb⁹⁷ Worn Putty
☐ Vent Caps: Missing _____ Rusty _____ Damaged _____

ROOF DRAINAGE

☒ Gutters: Metal Wood Plastic Loc: _____ Cond: _____
 Metal Wood Plastic Loc: _____ Cond: _____
 Damage Debris Standing Water Stains / Leaks Rust⁹⁸ Sagging Separation at Eave Gaps
 Missing Flashing at Eave Connection⁹⁹ Roofing Extends over Gutter¹⁰⁰ Gutter Spillage¹⁰¹ No Gutters at¹⁰² _____

☒ Low Slope Drainage: Type: Membrane Fascia¹⁰³ Surface Drains Parapet Scupper
 Surface Ponding¹⁰⁴ Previous Ponding No Secondary Drains¹⁰⁵ Shallow Gutterways¹⁰⁶

☒ Downspouts: Damaged Loose Missing Disconnected
 Extend Downspouts Away¹⁰⁷ Clear Debris¹⁰⁸ Subsurface Piping¹⁰⁹
 Replace Gutters and Downspouts at Reroofing Drainage System Maintenance¹¹⁰

FOUNDATION AND BASEME

Building Walls: Wood Framed Masonry Unknown

☐ Access, Loc: _____ Underfloor Areas Observed by: _____
Access Door: Missing Damaged Blocked _____ Crawling Walking

Access Door: *Missing* *Damaged* *Needs Lock*

Portions Inaccessible ¹¹¹ Access Limited by: Walls Floors Framing Ducting Pipes Storage Standing Water

<input checked="" type="checkbox"/> Foundation:	Raised Perimeter	Concrete	Slab	Block	Brick	Intermediate:	Piers	Walls	Grade Beams
-------------------------------------------------	------------------	----------	------	-------	-------	---------------	-------	-------	-------------

Cracks: ¹¹² Small Typical Large Several Rotation: ¹¹³ Not Unusual Major Efflorescence: ¹¹⁴ Minor Major

Deterioration: 115 Some Noted Major Movement - Settling: Typical Major Poor Quality Concrete 116

Substandard Pier Foundation at: _____ Foundation Walls Capped: 117
Portions May Soon Need Replacement Rx Evaluation by Engineer

Engineered: ¹¹⁸ Foundation Repairs Modifications

Slab Foundation:	Floors:	Carpeted	Uneven	Mostly Inaccessible	Cracks: ¹¹⁹	Small	Typical	Large	Several
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☐ Basement: Full Partial Small Walk-In Access: Full Partial Minimal Blocked by: Walls Storage Cabinets
Floors: Dry Damp Wet Below Grade Floors ¹²⁰ Wood Basement Floor ¹²¹ Floor Drain(s) ¹²²

SUBSTRUCTURE FRAMING

☒ **Floor Framing:** 2" Joists 4" Beams Trusses **Posts:** Wood Steel **Subflooring:** 1" 2" Plywood OSB Particle Board
Moisture Damage¹²³ Insect Pest Damage¹²⁴ Too Close to Soil Wood-Soil Contact¹²⁵ Stains¹²⁶ Wet Wood
Outdated Framing¹²⁷ Substandard Modifications Piers without Footings¹²⁸

☐ Insulation: ¹²⁹ None Partial Obscured Subfloor Fallen Needs Support Damaged Vapor Barrier: ¹³⁰ Inverted None
☐ Wall Bracing: Typical Outdated Damaged Missing Not Visible Stucco without Sheathing ¹³¹ Stucco over Fiberboard ¹³²

Bracing Panels: ⁽¹³³⁾ Several Present Improper Nailing Lacks Blocking Needs Ventilation

☒ Anchor Bolts: ¹³⁴ Observed Rx Additional None Not Visible Added Wedge Anchors Added ¹³⁵
Consult Qualified Engineer on Seismic Upgrading

SUBSTRUCTURE AREA

☒ **Ventilation:** ¹³⁶ *Minimal Inadequate Has Soil Vapor Barriers* ¹³⁷. **Vent Screens:** *Blocked Missing Damaged Louvered* ¹³⁸

Soils - Drainage:	<u>Dry</u>	Mostly Dry	Expansive? ¹³⁹	Moisture Noted ¹⁴⁰				
Minor Dampness	Wet	Standing Water	Previous Standing Water	Erosion	Soil Against Framing	Debris ¹⁴¹	Plants	
Rodent Activity	Embedded Form Wood ¹⁴²		Soil Covered with Concrete					
Unsupported Cut in Grade: ¹⁴³	Below Pier(s)		Below Foundation Walls	Above Framed Walls				

<input checked="" type="checkbox"/> Sump Pump: ¹⁴⁴	Loc: _____	Not Tested	Improper Well	Improper Wiring
Improper Piping:	Direct Sewer Connection	Missing Anti-Backwater Valve	Garden Hose	

ELECTRICAL SERVICE

- ☒ Service Conductors: Overhead Underground Loc: _____ Service Wiring: Copper Aluminum Unknown
In Tree(s) ¹⁴⁵ Worn Service Drop ¹⁴⁶ Too Low ¹⁴⁷ Mast Needs Bracing Weatherhead Wiring: Improper / Worn ¹⁴⁸
- ☒ Meter and Main Panel Disconnect: Breakers Fuses Loc: _____ Obstructed by Plants ¹⁴⁹
- Meter Only at: _____ Meter Not Sealed ¹⁵⁰ No Main Shutoff - Over Six Breakers ¹⁵¹ Pull-Out Fuse Block(s)
Lever Main - No Inside Cover ¹⁵² Federal Pacific ¹⁵³
- ☒ Service Capacity: ¹⁵⁴ 100 Amps Minimal Inadequate Voltage: 120/240 120-Volt Only ¹⁵⁵
- ☒ Grounding & Bonding: ¹⁵⁶ Not Present Not Located Ground Wire Unprotected ¹⁵⁷ Loose Clamp ¹⁵⁸
Ground Conduit Not Bonded ¹⁵⁹ Rod Not Fully Driven ¹⁶⁰ Add Grounding Rod Service Panel Not Bonded ¹⁶¹

DISTRIBUTION PANELS

- ☒ Panel Breakers Fuses Loc: BASEMENT Cond: _____
- ☐ Panel Breakers Fuses Loc: _____ Cond: _____
- ☐ Panel Breakers Fuses Loc: _____ Cond: _____
- ☐ Panel Breakers Fuses Loc: _____ Cond: _____
- A: Fed Pacific ¹⁶² B: In Clothes Closet ¹⁶³ C: Inaccessible ¹⁶⁴ D: Painted Over ¹⁶⁵
E: Needs Childproof Latch F: No Inside Cover ¹⁶⁶ G: Opening(s) in Face ¹⁶⁷ H: Scorching / Melting ¹⁶⁸
J: Rust / Corrosion ¹⁶⁹ K: Open Knockout Hole(s) ¹⁷⁰ L: Wires Unprotected at Hole(s) ¹⁷¹ M: Wrong Brand / Type Breaker ¹⁷²
N: Double Wiring ¹⁷³ O: Circuits Not Labeled P: Missing Handle Ties ¹⁷⁴ Q: Fused Neutrals ¹⁷⁵
R: Oversized Breakers / Fuses ¹⁷⁶ S: Same Pole Multi-Wire Circuit(s) ¹⁷⁷ T: Ground-Neutral Improper ¹⁷⁸
U: Loose Wiring near Panel ¹⁷⁹ V: Broken Breaker/Fuse Block W: Excess Wire in Panel ¹⁸⁰
Y: Damaged Insulation ¹⁸¹ Z: Anti-Oxidant Not Visible ¹⁸² AA: Loose End Wire(s) ¹⁸³ BB: Substandard Wiring ¹⁸⁴
CC: Excess Cable Sheathing ¹⁸⁵ DD: Improper Wire Color Coding ¹⁸⁶ EE: Cover Pressing on Wiring ¹⁸⁷

WIRING & FIXTURES

- ☒ Wiring/Cable: NMC(Romex) Knob and Tube ¹⁸⁸ Armored Cable (BX) Conduit
Unprotected Wiring ¹⁸⁹ Exposed Splices ¹⁹⁰
Loose Wiring ¹⁹¹ Aluminum 120-volt Wiring ¹⁹²
Extension or Zip Cord Wiring ¹⁹³ Abandoned Wiring ¹⁹⁴
Missing Box Covers ¹⁹⁵ Boxes Missing Knockouts ¹⁹⁶
Wires Unprotected at Holes ¹⁹⁷ Attic
Improper Wiring: Kitchen Laundry Garage Exterior Subfloor Area Basement Attic Carport
- ☒ Light Fixtures: Loose CLOSET Broken Missing
Nonfunctional Missing Globes Poorly Wired
Pull Chain at Sink Lens: Missing Cracked
Exposed Closet Bulbs
Paddle Fan(s): Added ¹⁹⁸ Loose Wobbles
- ☒ Door Bell: Nonfunctional Bell Cover Missing

RECEPTACLES AND SWITCHES

☐ Receptacles 3-Hole 2-Hole Both 2- & 3-Hole

Reverse Polarity ¹⁹⁹

Loose

Broken

Missing Covers

Insufficient Outlets ²⁰⁰

Improper Floor Type ²⁰¹

Three-Hole Adapters in 2-Hole Outlets ²⁰²

Ungrounded 3-Hole Outlets ²⁰³ Several

☐ GFCI Protection ²⁰⁴ Several None Rx Additional GFCI Defective at

Line-Load Reversal ²⁰⁵

☐ Switches

Loose

Broken

Missing Covers

Only Representative Switches and Receptacles Tested

EXTERIOR ELECTRICAL

☐ Exterior Components:

Improper Exterior Components: ²⁰⁶

Wiring: BX Romex

Conduit

Switches

Outlets

Boxes

Fixtures

Low Overhead Wiring

No Light(s) at Exterior Door

Exterior Light(s) Not Caulked to Siding

GFCI Needed at Exterior Outlets

ELECTRIC HEATERS

☐ Wall Mounted Baseboard Loc:

Cond:

☐ Wall Mounted Baseboard Loc:

Cond:

☐ Wall Mounted Baseboard Loc:

Cond:

Electric Heater Safety ²⁰⁷

GAS HEATERS

☐ Wall Furnace Direct Vent Floor Furnace Loc:

Cond:

☐ Wall Furnace Direct Vent Floor Furnace Loc:

Cond:

☐ Wall Furnace Direct Vent Floor Furnace Loc:

Cond:

In Bedroom ²⁰⁸

Direct Vent ²⁰⁹

Space Heater ²¹⁰

Wall/Floor Furnace Safety ²¹¹

Inadequate Combustion Air ²¹²

Non-Central System

Unheated Rooms ²¹³

Gas Connector: Outdated ²¹⁴

Copper

Aluminum

Brass

Rigid ²¹⁵

Improper

No Pilot Safety ²¹⁶

Thermostat(s): None Missing Damaged Not Tested

Receptacle over Heater

Vent/Flue/Chimney: Outdated Improper

Rx Safety Check

Rx Servicing and Evaluation ²¹⁷

Do Not Store Items near Heating Equipment ²¹⁸

ENVIRONMENTAL

☐ Presumed Asbestos-Containing Materials: ²¹⁹

Furnace

Ducting

Boiler

Piping

Outside Duct Register Boots

Furnace Vent

Water Heater Vent

Transite Vents

Inside Ducting at Registers

On Kitchen Range Hood Vent

In Furnace Blower Compartment

Electrical Compartment

Sprayed Acoustic Ceilings

9-Inch Vinyl Flooring Tiles

Rx Abatement by Qualified Professional

Indications of Possible Buried Fuel Oil Tank

About Hazardous Materials ²²⁰

WATER HEATER

Loc: Garage Basement Closet

Gas Electric

Gallons:

Condition:

Gas Off, Not Operated

Needs Catch Pan ²²¹Insufficient Garage Elevation ²²²Vehicle Barrier Needed ²²³☒ Control Knob: Missing Damaged Water Heater Maintenance ²²⁴ Rumbling Drain Dripping☒ Water Hookups: Rigid ²²⁵ Kinked No Shutoff Shutoff Bypassed Rusty - Previous Leaks Leaks☒ Bonding: ²²⁶ None Appears Incomplete☒ Gas Connector: Outdated: ²²⁷ Copper Aluminum Brass Rigid ²²⁸ Improper☒ Insulating Blanket: ²²⁹ Loose Improper Remove Has Circulating Pump Is Inactivated☒ TPR Valve: ²³⁰ None Leaks Pressure Valve Only ²³¹ Has Watts 210 ²³²☒ TPR Discharge: ²³³ Missing Improper Termination Ends in Subarea Flows Up Improper Material
Flex Undersized Threaded End☒ Seismic Restraints: ²³⁴ None Poor Outdated Not Rigid☒ Venting Flue/Chimney: Improper / Outdated Material: ²³⁵ Masonry Tile-Lined Metal Transite Aluminum Stove Pipe
Duct Tape ²³⁶ Poorly Attached Spillage ²³⁷ Remove Foam Insulation ²³⁸ Inadequate Clearance ²³⁹
Insufficient Rise ²⁴⁰ Piping Damaged Improper Horizontal-to-Vertical Ratio ²⁴¹ Improper Termination ²⁴²Draft Diverter: ²⁴³ Loose Displaced Double☒ Combustion Air: Inadequate ²⁴⁴ Screens Dirty

Solar Tank and System Present, Not Inspected

Do Not Use Area near Water Heater for Storage

WATER HEATER

Loc: Garage Basement Closet

Gas Electric

Gallons:

Condition:

Gas Off, Not Operated

Needs Catch Pan ²²¹Insufficient Garage Elevation ²²²Vehicle Barrier Needed ²²³☐ Control Knob: Missing Damaged Water Heater Maintenance ²²⁴ Rumbling Drain Dripping☐ Water Hookups: Rigid ²²⁵ Kinked No Shutoff Shutoff Bypassed Rusty - Previous Leaks Leaks☐ Bonding: ²²⁶ None Appears Incomplete☐ Gas Connector: Outdated: ²²⁷ Copper Aluminum Brass Rigid ²²⁸ Improper☐ Insulating Blanket: ²²⁹ Loose Improper Remove Has Circulating Pump Is Inactivated☐ TPR Valve: ²³⁰ None Leaks Pressure Valve Only ²³¹ Has Watts 210 ²³²☐ TPR Discharge: ²³³ Missing Improper Termination Ends in Subarea Flows Up Improper Material
Flex Undersized Threaded End☐ Seismic Restraints: ²³⁴ None Poor Outdated Not Rigid☐ Venting Flue/Chimney: Improper / Outdated Material: ²³⁵ Masonry Tile-Lined Metal Transite Aluminum Stove Pipe
Duct Tape ²³⁶ Poorly Attached Spillage ²³⁷ Remove Foam Insulation ²³⁸ Inadequate Clearance ²³⁹
Insufficient Rise ²⁴⁰ Piping Damaged Improper Horizontal-to-Vertical Ratio ²⁴¹ Improper Termination ²⁴²Draft Diverter: ²⁴³ Loose Displaced Double☐ Combustion Air: Inadequate ²⁴⁴ Screens Dirty

Solar Tank and System Present, Not Inspected

Do Not Use Area near Water Heater for Storage

PLUMBING - WATER SUPPLY

- ☒ Water Source: Metered Unknown Well²⁴⁵ Domestic Water Landscape Irrigation
- ☐ Main Valve: Loc: Not Found²⁴⁶ Not Easily Accessible Stuck Missing/Broken Handle Leaks
- ☐ Main Incoming Piping: Copper Galvanized Plastic Half Inch Supply
- ☐ Water Pressure: 50 PSI Low High Excessive²⁴⁷
- Regulator: ²⁴⁸ Loc: May Need Adjustment / Repair Ahead of Main

WATER SUPPLY PIPING

- ☒ Interior Piping: Copper Galvanized²⁴⁹ Galvanized and Copper Plastic Polybutylene²⁵⁰
- Cross Connections²⁵¹ Unbonded Dielectrics²⁵²
- Hammer / Noise²⁵³ Direct Copper-Galv Connections²⁵⁴
- Rust Leaks Missing Piping Supports
- Inaccessible at: Substandard / Missing Piping Supports
- ☒ Angle Stops: ²⁵⁵ Not Tested Many Older/Worn Missing Handles Leaks
- ☒ Hose Faucets: Add Backflow Preventers²⁵⁶ Leaks Drips
- ☐ Irrigation System: Not Inspected Leaks Broken Heads Exposed PVC²⁵⁷ Needs Anti-Siphon Valves²⁵⁸
- ☐ Water Flow at Fixtures: ²⁵⁹ Noticeable Drop Major Drop Little/No Flow at:
- ☐ Water Softener: ²⁶⁰ Not Inspected Improper Softener Drain²⁶¹

DRAINS AND VENTS

- ☐ Piping: Cast Iron Galvanized ABS Plastic Copper
- Potential Cross Connection²⁶² at: Improper Piping
- Leaks Substandard Piping Supports²⁶³
- Missing / Broken Piping Supports²⁶³ Insufficient Fall²⁶⁵
- Open Waste Pipe²⁶⁴ Exposed Exterior ABS Piping²⁶⁷
- Trap: Improper / Missing²⁶⁶ Plastic Pipes Supporting Metal Pipes²⁶⁹
- Missing / Improper Vent²⁶⁸ Cleanout Added²⁷¹
- Old Sewer Piping? ²⁷⁰ Rx Video Check Potentially Defective ABS ('85-'88)²⁷³ Centaur / Gable / Polaris / Apache / Phoenix
- Septic Not Inspected²⁷² Sewage Ejector Pump Loc: Cond:
- ☒ Flow at Drains: ²⁷⁴ Poor Drainage at:

FUEL ENERGY SOURCE

- Natural Gas Fuel Oil Solar Provided by Utility/Private
- ☒ Gas Meter: Loc: Left of Meter Outside near Meter
- Access Obstructed by: Soils Plants Not Protected from Vehicles²⁷⁵ Rusted / Improper Fittings Has Seismic Shutoff
- ☐ Gas Piping: Leaks Uncapped Fitting²⁷⁶
- Improper / Missing Supports Improper Union Location²⁷⁷
- Underground Below Building²⁷⁸ Unprotected in or near Ground²⁷⁹
- Appliance Gas Shutoff Valve: Missing Defective
- ☐ Fuel Storage Equipment and Venting
- Propane Tank Loc: Above-Ground Oil Tank, Loc: Seismic Restraint Needed

CENTRAL HEATING EQUIPMENT

- ☐ Furnace ☐ Heat Pump ☐ Hydronic Boiler ☐ Steam Boiler ☐ Has Air Conditioning (see below)
Loc: Cond: BTUs: ,000
Fuel: ☒ Gas ☐ Electric ☐ Oil ☐ Gas Off ☐ Pilot Off ☐ Solar-Assisted
- ☐ Controls: ☒ No Disconnect Switch²⁸⁰ Thermostat: ☐ None ☐ Missing ☐ Damaged ☐ Not Tested
- ☐ Gas Connector:²⁸¹ ☐ Outdated: ☐ Copper ☐ Aluminum ☐ Brass ☒ Rigid Improper
- ☐ Heat Exchanger:²⁸² ☐ Partially Accessible ☒ Inaccessible ☐ Rusty ☐ Worn ☐ Cracked
Rx Safety Check ☒ Rx Servicing and Evaluation²⁸³ Do Not Store Items near Heating Equipment²⁸⁴

VENTING

- ☐ Combustion Air: ☒ Inadequate²⁸⁵ ☐ Screen(s) Dirty ☐ Poor Separation²⁸⁶ ☐ Gaps
- ☐ Venting: ☐ N/A ☐ Gravity ☒ Induced Draft ☐ Condensing ☐ Direct Vent
- ☐ Venting Flue/Chimney: ☒ Improper / Outdated Material:²⁸⁷ ☒ Masonry ☐ Tile-Lined Metal ☐ Transite ☐ Aluminum ☐ Stove Pipe
☐ Duct Tape²⁸⁸ ☐ Separations ☐ Spillage²⁸⁹ ☐ Inadequate Clearance²⁹⁰ ☐ Insufficient Rise²⁹¹ ☐ Improper Horiz-to-Vert Ratio²⁹²
☐ Improper Termination²⁹³ ☒ Inducer Deposits²⁹⁴ ☐ Exposed in Closet²⁹⁵

HEATING/COOLING DISTRIBUTION

- Method: ☒ Forced Air ☐ Gravity ☐ Circulator ☐ Piping ☐ Radiators ☐ Convector ☐ Piping in Slab
- ☐ Ducting: ☐ On Soil ☐ Damaged ☐ Separations / Gaps²⁹⁶ ☐ Needs Support ☐ Exposed Ducting in Closet
Air Return: ☐ Needs Cleaning ☐ Gaps
Registers: ☐ Missing ☐ Damaged
Insulation: ☐ Missing ☐ Loose ☐ Damaged
- ☐ Air Filter (s):²⁹⁷ Loc: ☐ Filter Cover Missing²⁹⁸
☒ Disposable ☐ Reusable ☐ Electronic ☐ Missing ☐ Loose ☐ Too Small ☐ Needs Cleaning ☒ Replace
- ☐ Blower: ☐ Needs Cleaning ☐ Vibration ☐ Belt Worn ☐ Gaps at Floor²⁹⁹ ☐ Loose Blower Door³⁰⁰
- ☐ Fan-Coil Units / Pumps / Piping Supports / Radiators / Convector: ☐ Valves Leaky ☐ Have Encased Piping Pressure-Tested³⁰¹
- ☐ Heating Adequacy in Habitable Rooms:³⁰² ☒ Not Determined ☐ Non-Central System ☐ Unheated Rooms

CENTRAL AIR CONDITIONING

- ☐ Air Handling Equipment: ☐ Split System³⁰³ ☐ Package Unit³⁰⁴ ☐ Heat Pump ☐ Below 65° Not Operated³⁰⁵
- ☐ Controls: ☐ Disconnect Not in Sight of Condenser³⁰⁶
- ☐ Coolant Piping ☐ Insulation: ☐ Damaged ☐ Missing ☐ Frost / Ice on Lines / Unit
- ☐ Condenser Loc: Cond: ☐ Noisy ☐ Vibration ☐ Corroded/Rusted
☐ Not Level ☐ Insufficient Grade Clearance ☐ Too Close To Wall / Fence
- ☐ Condensate Drain Piping:³⁰⁷ ☐ No Trap ☐ Secondary Drain Needed ☐ Catch Pan Needed³⁰⁸
☐ Piping Support / Slope Improper ☐ Discharge Location Improper
- ☐ Temperature Split:³⁰⁹ ☐ Not Measured ☐ High / Low
- ☐ Adequate Cooling to Each Room: ☐ Not Determined ☐ Rx A.C. System Servicing and Evaluation

ATTIC

- ☐ Access Loc: Hall Ceiling Bedroom Closet
 Observed by: Walking Crawling View Limited to Opening(s) Not Fully Accessible No Access Provide Access
- ☐ Roof Structure: 2x Rafters Trusses Beams Ceilings: 2x Joists Exposed Beam Trusses
Sheathing: Plywood Panels Boards Spaced Sheathing Wood Shingles Visible Trusses Cut ³¹⁰
Stains on Framing Signs Of Active Water Entry Undersized Framing ³¹¹ Outdated Sagging
- ☐ Ventilation: Minimal Inadequate ³¹² Vents Blocked Condensation
Vent Screens: ³¹³ Missing Damaged Covered Exhaust Fan Terminates in Attic ³¹⁴
- ☒ Insulation ³¹⁵ _____ Inches None Suggest Additional K&T Wiring Present ³¹⁶ Indications of Rodent Activity
Loose Cellulose Fiberglass Rock-Wool Batts Cellulose on K&T Wiring ³¹⁷ Over Lights ³¹⁸
- ☒ Vapor Barriers: ³¹⁹ Inverted Barriers ³²⁰ Touches Knob & Tube Wiring ³²¹

GARAGE

- Type: Attached Semi-Attached Detached Carport Location: _____
 Garage Access: Partial Minimal Limited By Storage Vehicle(s) Not Inspected / Locked
 Protective Barrier Needed for: ³²² Water Heater Furnace Gas Piping Remove Firewood ³²³
Not 18 Inches from Floor: ³²⁴ Water Heater Furnace Clothes dryer
- ☒ Vehicle Door(s): 1 2 3 Tilt Up Roll Up Sliding Swinging None Manual Automatic
Difficult to Operate Damaged Locked Obstructed Non-Safety Springs ³²⁵
- ☒ Door Opener(s): No Auto Reverse ³²⁶ Noisy Needs: Repair / Adjustment / Proper Outlet
- ☒ Concrete Floor: Cracks: Small Medium Large Mostly Inaccessible
- ☒ Framing: Add Bracing Moisture-Related Damage Room over Garage Extension ³²⁷
- ☒ Exterior Door: Damaged Needs Paint Sticks Untempered Glass Not Inspected: Inaccessible Locked
- ☒ Exterior Walls: Faulty Grade ³²⁸ Wood-Soil Contact ³²⁹ Siding Damage Not Accessible at _____
- ☒ Fire Walls - Ceilings: ³³⁰ Damaged Gaps Holes Missing Surfaces Non Fire-Rated Penetration None
- ☐ Fire Door(s) To: ³³¹ House Basement Subfloor Attic
 A: Not Fire Rated B: Hollow Core C: Panel Door D: Missing E: Not Self-Closing F: Pet Door G: Metal Covered

HALF BATH

- Loc: ATTIC ROOM ☐ Sink Cracked Chipped Loose Faucet Leaks Hot/Cold Reversed
- ☒ Counter - Cabinet: Cond: _____ Grout Worn
- ☒ Drains: Worn Leaks Loose Improper Flex ³⁸¹ Slow Stopper Defective No Stopper
- ☒ Toilet: Loose ³⁸³ Cracked Tank Lid Cracked Tank Loose Loose Seat Defective Flush Valve
Fill Valve Leaking / Submerged ³⁸⁵ Insufficient Clearance: ³⁸⁴ Front(<24") Side(<15")
- ☒ Floor: Cond: _____ Cracked Tiles Worn Grout Damage
- ☒ Ventilation: None Fan: Noisy Nonfunctional Window: Nonfunctional Difficult Broken Sash Cords
- ☒ Outlets: None 2-Hole 3-Hole Needs GFCI ³⁸⁸ Has GFCI ³⁸⁸ Ungrounded 3-Hole ³⁸⁷ Reverse Polarity ³⁸⁸ On Fixture ³⁸⁹
- ☒ Door Latch: Defective None ☐ Electric Heater: Outdated ³⁹¹ Defective

INTERIOR

☐ **Walls and Ceilings:** Gypsum Drywall Plaster Paneling Wood Ceilings
Common Cracks³³² Major Cracks Damage Loose Plaster
Low Ceilings³³³ Stains³³⁴

Dry Wet Active Leaks Excessive Condensation Cathedral Ceiling Unvented?³³⁵

☐ **Floors:** Uneven, Typical Slope Noted Floor Slope Not Measured³³⁶
Damaged Squeaks / Noise

☐ **Stairways:** Uneven Steps³³⁷ Steep Narrow
Low Overhead Stair Compartment Not Fire Rated³³⁸

☐ **Railings:**³³⁹ None Partial Railing
Improper Grip Large Openings
Low Loose

☐ **Smoke Detector(s):**³⁴⁰ None In Hallway(s) Several Tested at Button Only On Wall, Relocate
Damaged Missing Cover Missing Battery Add Smoke Detectors Add CO Detector
Fire Sprinkler System Security System Central Vacuum Not Tested

☐ **Wall / Window Air Conditioning Unit (s):** Not Inspected

WINDOWS and DOORS

☐ **Windows** Wood Aluminum Steel Vinyl Metal Clad
Double Hung Sliders Casement Single Hung Fixed Glass Jalousie Awning

Several Nonfunctional Difficult Painted Shut

Worn Putty Missing Putty
Cracked Glass Broken Glass
Dual Glazed³⁴¹ Fogged Dual Glazing
Damaged Sash Peeling Paint

Cords Broken/Worn Defective Latches Missing Latches Only Representative Windows Checked
Egress:³⁴² None Too High Too Small Unopenable Security Bars³⁴³

Glass Apparently Untempered:³⁴⁴ In Door(s) Several Next to Door(s) Low Window(s) Several

☐ **Screens:** Not Inspected Damaged Missing

☐ **Doors:** Sticks Rubs at Frame Drags on Floor
Doesn't Close Signs of Water Entry
Damaged Opens over Step³⁴⁵
Latch Defective Inside Key Lock(s)³⁴⁶ Locks Too High (>4')
Worn Finish Several Difficult to Operate Several Unsquare Frames³⁴⁷
Sliding Glass Door(s): Difficult³⁴⁸ Rusty

☐ **Closets:** Mostly Inaccessible Closet Doors: Difficult / Missing / Off Tracks / Damaged Exposed Appliance Vent³⁴⁹

FIREPLACE

Loc: _____ Living Room Bedroom Dining Room Family Room

☒ Fireplace Brick Masonry Prefabricated Insert Freestanding

☒ Firebox: Brick Masonry Panels Metal Panels Steel Cast Iron Cond: _____

Cracks: Minor / Major Gaps at Facing / Hearth Soft / Missing Mortar ³⁵⁰ Loose Bricks Spalling ³⁵¹

Throat Needs Parging ³⁵² Parging Damaged Gaps Exposed Bricks

Stains, Fireplace May Smoke ³⁵³

☒ Damper: ³⁵⁴ None Stuck Damaged Difficult Glass Doors w/o Damper Suggest Glass Doors At Chimney Top

☒ Gas Lighter: ³⁵⁵ Block Damper Open ³⁵⁶ Flex Connector In Firebox ³⁵⁷ Plumbed for Gas - No Device Installed

☒ Hearth Extension: Too Small Cracked Tiles Loose Brick(s) Settlement Supported by Wood Framing ³⁵⁸

☒ Insert / Stove: ³⁵⁹ Cond: _____ Flue Needs Metal Lining Have Flue Checked Inadequate Clearance ³⁶⁰

☒ Chimney: Masonry ³⁶¹ Sheet Metal Tile-Lined Metal Flues: 1 2 3 ? Top Not Accessible

☒ Flue: Needs Cleaning Mostly Inaccessible May Need Bracing ³⁶² Concrete / Pumice Liner ³⁶³ Flue Unlined ³⁶⁴

Flue Liner Damaged ³⁶⁵ Short, May Smoke ³⁶⁶ Mortar Deterioration ³⁶⁷ Mortar Cap: Worn / Damaged / Missing ³⁶⁸

Settlement ³⁶⁰ Gaps at Siding Cracks in Brickwork / Stucco Bricks Damaged Rx Safety Check

☒ Rain Cap & Spark Screen: ³⁷⁰ Has Both Neither No Screen No Cap Spark Screen Improper ³⁷¹ Has Shroud ³⁷²

☒ Strength: Chimney Not Pushed ³⁷³ Chimney Pushed-OK ³⁷⁴ Loose above Roof ³⁷⁵

☒ ~~2. NO COVERING PLACED OVER FIREBOX~~

FIREPLACE

Loc: _____ Living Room Bedroom Dining Room Family Room

☐ Fireplace Brick Masonry Prefabricated Insert Freestanding

☐ Firebox: Brick Masonry Panels Metal Panels Steel Cast Iron Cond: _____

Cracks: Minor / Major Gaps at Facing / Hearth Soft / Missing Mortar ³⁵⁰ Loose Bricks Spalling ³⁵¹

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Flue Liner Damaged ³⁶⁵ Short, May Smoke ³⁶⁶ Mortar Deterioration ³⁶⁷ Mortar Cap: Worn / Damaged / Missing ³⁶⁸

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☐ Strength: Chimney Not Pushed ³⁷³ Chimney Pushed-OK ³⁷⁴ Loose above Roof ³⁷⁵

BATHROOM

Loc: Hall Main Bedroom Bedroom
 Type: Shower over Tub Shower Only Separate Tub & Shower Tub Only Water Closet Only
☐ Bathtub: Worn Chipped Whirlpool: No Motor Access Not Tested No GFCI
☐ Shower Walls: Cond: Wall Damage Needs: Grout / Caulking ³⁷⁶ Loose Tiles Cracked Tiles Low Window ³⁷⁷
☐ Shower Head: Leaks Missing Defective Noticeable Drop in Water Flow ³⁷⁸ Diverter Valve Defective / Leaks
☐ Glass: Apparently Untempered: ³⁷⁹ Shower Doors Window at Tub / Shower Door Leaks Enclosure Leaks
☐ Sink(s): Cracked Chipped Damaged Loose Inaccessible Below Sink ☐ Counters: Needs Grout Cracked / Loose Tiles
☐ Cabinet: Finish Worn Damaged: Drawers Doors Floor Hinges: Loose - Broken
☐ Faucets & Valves: Leaks: Sink Tub Shower Hot/Cold Reversed: Sink Tub Shower Flex Plastic Supplies ³⁸⁰
☐ Drains: Worn Leaks Loose Improper Flex ³⁸¹ Slow
☐ Stoppers: Sink: Defective None Tub: Defective None Escutcheons: ³⁸² Loose Missing Gaps
☐ Toilet: Loose ³⁸³ Cracked Tank Lid Cracked Loose Seat Insufficient Clearance: ³⁸⁴ Front(<24") Side(<15")
 Defective Flush Valve Fill Valve Leaking / Submerged ³⁸⁵ Loose Tank Bidet: No Anti-Siphon Device
☐ Floor: Cond: Cracked Tiles Worn Grout Damage
☐ Ventilation: None Fan: Noisy Nonfunctional Window: Nonfunctional Difficult Broken Sash Cords
☐ Outlets: None 2-Hole 3-Hole Needs GFCI ³⁸⁴ Has GFCI ³⁸⁶ Ungrounded 3-Hole ³⁸⁷
 Reverse Polarity ³⁸⁸ On Fixture ³⁸⁹ Metal Light Fixture in Shower ³⁹⁰
☐ Door Latch: Defective None ☐ Electric Heater: Outdated ³⁹¹ Defective

BATHROOM

Loc: Hall Main Bedroom Bedroom
 Type: Shower over Tub Shower Only Separate Tub & Shower Tub Only Water Closet Only
☐ Bathtub: Worn Chipped Whirlpool: No Motor Access Not Tested No GFCI
☐ Shower Walls: Cond: Wall Damage Needs: Grout / Caulking ³⁷⁶ Loose Tiles Cracked Tiles Low Window ³⁷⁷
☐ Shower Head: Leaks Missing Defective Noticeable Drop in Water Flow ³⁷⁸ Diverter Valve Defective / Leaks
☐ Glass: Apparently Untempered: ³⁷⁹ Shower Doors Window at Tub / Shower Door Leaks Enclosure Leaks
☐ Sink(s): Cracked Chipped Damaged Loose Inaccessible Below Sink ☐ Counters: Needs Grout Cracked / Loose Tiles
☐ Cabinet: Finish Worn Damaged: Drawers Doors Floor Hinges: Loose - Broken
☐ Faucets & Valves: Leaks: Sink Tub Shower Hot/Cold Reversed: Sink Tub Shower Flex Plastic Supplies ³⁸⁰
☐ Drains: Worn Leaks Loose Improper Flex ³⁸¹ Slow
☐ Stoppers: Sink: Defective None Tub: Defective None Escutcheons: ³⁸² Loose Missing Gaps
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 Reverse Polarity ³⁸⁸ On Fixture ³⁸⁹ Metal Light Fixture in Shower ³⁹⁰
☐ Door Latch: Defective None ☐ Electric Heater: Outdated ³⁹¹ Defective

LAUNDRY

Loc: Garage near Kitchen Basement

Laundry Equipment Not Inspected

- ☐ Venting: No Dryer Vent Vent Ends in Crawlspace Flexible Dryer Vent Piping in Crawlspace³⁹²
 Dryer Vent: Flows Up³⁹³ Is Too Long³⁹⁴ Weather Hood Missing / Damaged Area Ventilation Insufficient
- ☒ Gas Supply: None Gas Apparently Provided Not Visible Not Tested Gas Connector: Outdated³⁹⁵ Improper
- ☒ Washer Plumbing: Improper Drain Piping³⁹⁶ No Trap Not Vented Add Catch Pan and Drain³⁹⁷ 1½ Inch Drain³⁹⁸
- ☒ Sink - Tub: Loose Damaged Drain: Worn Leaks Loose Improper Flex³⁹⁹ Slow
- ☒ Floor: Vinyl Tile Linoleum Carpet Wood Area Below Appliances Inaccessible Condition: _____
- ☒ Electrical: 240 Volt Outlet Provided 240V Not Tested Install Grounded Outlet
 Gas Fired Water Heater nearby - Caution!⁴⁰⁰

WET BAR

- ☐ Countertops: Cond: _____ Partially Covered Needs Caulking Tiles: Cracked Chipped Grout Worn
- ☐ Sink(s): Cast Iron Enamel Steel Stainless Plastic Chipped Sink Needs Caulking
- ☐ Cabinets: Cond: _____ Finish Worn Stains / Damage below Sink
 Doors: Damaged Missing Loose Hinges Drawers: Damaged Difficult Missing
- ☐ Sink Faucet(s): Worn Leaks Loose Hot/Cold Reversed Flex Plastic Supplies⁴⁰¹
- ☐ Sink Drain: Worn Leaks Loose Improper Flex Drain⁴⁰² Slow
- ☐ Electrical: Has GFCI⁴⁰³ Needs GFCI⁴⁰³ Ungrounded 2-Hole Ungrounded 3-Hole⁴⁰⁴

KITCHEN

- ☒ Countertops: Cond: None Needs Caulking Partially Covered Tiles: Cracked Chipped Grout Worn
- ☒ Sink(s): Chipped Worn Sink Needs Caulking
- ☒ Cabinets: Cond: None Finish Worn Stains / Damage below Sink
 Doors: Damaged Missing Loose Hinges Drawers: Damaged Difficult Missing
- ☒ Floor: Condition: None Damaged
- ☒ Ventilation: Window Unopenable
- ☒ Exhaust Fan: ⁴⁰⁵ Noisy Nonfunctional Needs Cleaning Screen Missing Unducted Type⁴⁰⁶
- ☒ Cooking Appliances - Ovens: Stove Wall Gas Electric Elements Nonfunctional / Don't Light
 Cooktop: Stove Separate Gas Electric Elements Nonfunctional / Don't Light
- ☒ Dishwasher: Cond: None Not Tested Nonfunctional Door Spring Defective RY 2.00E DRAINAGE
- ☒ Air Gap: ⁴⁰⁷ None Leaks Loose LOOP
- ☒ Disposer: Nonfunctional Noisy Disposer Wiring Loose⁴⁰⁸ Romex Wiring⁴⁰⁹ Switch Location Hazardous⁴¹⁰
 Splash Guard: Worn Missing Batch Feed Type
- ☒ Sink Faucet(s): Worn Leaks Loose Hot-Cold Reversed Flex Plastic Supplies⁴¹¹
- ☒ Sink Drain: Worn Leaks Loose Improper Flex⁴¹² Slow
- ☒ Electrical: Has GFCI⁴¹³ Needs GFCI⁴¹³ Ungrounded 2-Hole Ungrounded 3-Hole⁴¹⁴ Light Flickers⁴¹⁵
 Insufficient Outlets⁴¹⁶ Refrigerator Needs Grounded Outlet Missing Outlets

Primary Recommendations

This page is a summary of conditions listed under the main headings in the report. There may be additional items listed in the report not shown here which are in need of contractor evaluation and/or repair.

Please consult the full report and glossary for more detailed information essential to this report.

EXTERIOR

See Pages 4-5

Siding / Trim Doors / Windows Eaves Porches / Stairs / Decks / Balconies Guardrails / Handrails
Grading / Drainage Driveway / Walks / Patios Retaining Walls Pool / Spa Other

ROOFING

See Page 6

Roofing Flashings Skylights Vent Caps Gutters Roof Drainage Downspouts Other

FOUNDATION

See Page 7

Access Foundation Basement Framing Insulation Bracing Seismic Upgrading
Ventilation Drainage Sump Pump Pest/Moisture Damage Other

ELECTRICAL

See Pages 8-9

Main Panel Subpanels Wiring / Fixtures Receptacles / Switches GFCIs Other

HEATERS

ENVIRONMENTAL

See Page 9

Room Heaters Electric Heaters Wall/Floor Furnaces Other

WATER HEATER

See Page 10

Elevation Water Supply Gas Connector TPR Seismic Venting Combustion Air Other

PLUMBING

See Page 11

Main Supply Piping Water Piping Pressure / Low Flow Waste Piping Gas Piping Other

HEATING

AIR CONDITIONING

See Page 12

Central Heating Gas Connector Combustion Air Venting Ducting Needs Servicing Other

ATTIC

See Page 13

Access Framing Ventilation Insulation Other

GARAGE

See Page 14

Vehicle Door Framing Fire Separation Exterior Walls Other

INTERIOR

See Page 15

Walls Ceilings Floors Windows Doors Stairways Railings Smoke Detectors Other

FIREPLACES AND CHIMNEYS

See Page 15

Firebox Hearth Damper Chimney Flues Exterior Gaps/Cracks Other

BATHROOMS

See Page 16

Shower Walls Glass Faucets / Valves Drains Toilet Floors Ventilation GFCIs Other

LAUNDRY

See Page 17

Venting Floors Plumbing Other

KITCHEN

WET BAR

See Page 17

Cabinets Floors Appliances Disposer Faucets Drains Electrical Other

LAUNDRY

Loc: Garage near Kitchen Basement

Laundry Equipment Not Inspected

- ☐ Venting: No Dryer Vent Vent Ends in Crawspace Flexible Dryer Vent Piping in Crawspace³⁹²
 Dryer Vent: Flows Up³⁹³ Is Too Long³⁹⁴ Weather Hood Missing / Damaged Area Ventilation Insufficient
- ☒ Gas Supply: None Gas Apparently Provided Not Visible Not Tested Gas Connector: Outdated³⁹⁵ Improper
- ☒ Washer Plumbing: Improper Drain Piping³⁹⁶ No Trap Not Vented Add Catch Pan and Drain³⁹⁷ 1 1/2 Inch Drain³⁹⁸
- ☒ Sink - Tub: Loose Damaged Drain: Worn Leaks Loose Improper Flex³⁹⁹ Slow
- ☒ Floor: Vinyl Tile Linoleum Carpet Wood Area Below Appliances Inaccessible Condition: _____
- ☒ Electrical: 240 Volt Outlet Provided 240V Not Tested Install Grounded Outlet
 Gas Fired Water Heater nearby - Caution!⁴⁰⁰

WET BAR

- ☐ Countertops: Cond: _____ Partially Covered Needs Caulking Tiles: Cracked Chipped Grout Worn
- ☐ Sink(s): Cast Iron Enamel-Steel Stainless Plastic Chipped Sink Needs Caulking
- ☐ Cabinets: Cond: _____ Finish Worn Stains / Damage below Sink
 Doors: Damaged Missing Loose Hinges Drawers: Damaged Difficult Missing
- ☐ Sink Faucet(s): Worn Leaks Loose Hot/Cold Reversed Flex Plastic Supplies⁴⁰¹
- ☐ Sink Drain: Worn Leaks Loose Improper Flex Drain⁴⁰² Slow
- ☐ Electrical: Has GFCI⁴⁰³ Needs GFCI⁴⁰³ Ungrounded 2-Hole Ungrounded 3-Hole⁴⁰⁴

KITCHEN

- ☒ Countertops: Cond: Needs Caulking Partially Covered Tiles: Cracked Chipped Grout Worn
- ☒ Sink(s): Chipped Worn Sink Needs Caulking
- ☒ Cabinets: Cond: Needs Caulking Finish Worn Stains / Damage below Sink
 Doors: Damaged Missing Loose Hinges Drawers: Damaged Difficult Missing
- ☒ Floor: Condition: Damaged
- ☒ Ventilation: Window Unopenable
- ☒ Exhaust Fan: ⁴⁰⁵ Noisy Nonfunctional Needs Cleaning Screen Missing Unducted Type⁴⁰⁶
- ☒ Cooking Appliances - Ovens: Stove Wall Gas Electric Elements Nonfunctional / Don't Light
 Cooktop: Stove Separate Gas Electric Elements Nonfunctional / Don't Light
- ☒ Dishwasher: Cond: Not Tested Nonfunctional Door Spring Defective
- ☒ Air Gap: ⁴⁰⁷ None Leaks Loose
- ☒ Disposer: Nonfunctional Noisy Disposer Wiring Loose⁴⁰⁸ Romex Wiring⁴⁰⁹ Switch Location Hazardous⁴¹⁰
 Splash Guard: Worn Missing Batch Feed Type
- ☒ Sink Faucet(s): Worn Leaks Loose Hot-Cold Reversed Flex Plastic Supplies⁴¹¹
- ☒ Sink Drain: Worn Leaks Loose Improper Flex⁴¹² Slow
- ☒ Electrical: Has GFCI⁴¹³ Needs GFCI⁴¹³ Ungrounded 2-Hole Ungrounded 3-Hole⁴¹⁴ Light Flickers⁴¹⁵
 Insufficient Outlets⁴¹⁶ Refrigerator Needs Grounded Outlet Missing Outlets

☒ = Serviceable + = Needs Attention X = Contractor Evaluation/Repair - = Not Inspected RF = Refer to Restroom RX = Recommend EGI = Engineer
 NC = New RN = Rel. New MN = Minor Wear MD = Moderate Wear GW = Generally Worn PC = Poor RS = Replace Soon NF = Nonfunctional

PROPERTY DESCRIPTION

9. **Condominium:** A jointly owned property, with each owner holding title to an interest in the land and structure in common with others and absolute title to the air space encompassed by the unit walls. Condominiums are typically under the jurisdiction of a homeowner's association. The recorded CC&Rs and any other rules, regulations, and bylaws of the association should be examined to determine the responsibilities and liabilities of both the association and the home owner. The association should also be consulted as to the likelihood of future assessments.
10. **Furnished, Defects May Be Obscured:** Furnishings prevent complete access and may obscure conditions in need of correction. We recommend areas obscured by furnishings be inspected when accessible, preferably before the close of escrow.
11. **Contact Building Department:** It is important to learn as much as possible about any changes, repairs, additions, or other modifications to the building. The installing contractor should be contacted when there is a new roof, new furnace, or other recent installation, for information on maintenance and transferability of any applicable guarantees or warranties. We recommend that a permit history be obtained from the local building department to determine whether properly finalized building permits are on file for all additions or modifications.
12. **Utilities Off:** The gas, electrical, and/or water supply to the building was shut off and we did not perform an operational examination of the gas-fired appliances. We can return to the site and inspect these items for additional fee upon request.

EXTERIOR

13. **Stucco:** Stucco consists of a cement and sand plaster, reinforced with wire lath and installed over a water resistant membrane. New stucco is typically pigmented rather than painted, and the surface may show absorption of moisture from rains. Stucco cracking is common and may be caused by movement in the wall framing, foundation settling, seismic activity, or stucco shrinkage. Minor cracks usually do not need repair and are normally filled when the stucco is painted. Cracks large enough to allow water entry should be caulked or patched. In relatively new construction, the bottom of the stucco typically has a metal edge called a "weep screed." The soil surface should be maintained below this edge to prevent moisture and termite entry behind the stucco. In older buildings, the bottom of the stucco often extends below soil level and may conceal moisture or termite entry.
14. **Stucco Test Openings:** Holes are often made in stucco by pest control firms to look for damage behind the stucco so a determination can be made as to the presence of wood-destroying pests or organisms. We recommend a qualified pest control firm be consulted for information on the findings of such an investigation.
15. **Stucco Crack Repairs:** The stucco siding shows indications of previous cracking and subsequent repairs. We recommend a history of stucco crack repairs be obtained to determine the extent of previous damage or movement in the structure.
16. **Insufficient Plywood Nailing:** The standard spacing for plywood siding nails is 6 inches around the perimeter of each sheet and ten inches in the center areas. Insufficient nailing, a common defect, can allow the siding to buckle and pull away from the framing. Plywood siding is often used to reinforce the building frame and adequate nailing may be necessary to resist wind or seismic forces.
17. **Siding Separation:** The siding on the walls above the roof is too close to the roof surfaces below. The proper method is to provide a space about two inches wide below the siding to prevent rain water flow against the siding and to keep these connections free of debris accumulation which can damage the siding. We recommend siding-to-roof connections be modified as needed to provide adequate separation.
18. **Wood Composite:** Composite or manufactured siding materials, including hardboard and "OSB" are now commonly used instead of lumber. Some brands of composite siding have been the subject of product defects and manufacturer recalls. A common defect is lack of painting on the back side of the material, a condition not discernible by visual inspection of the completed installation. This siding should not have excessive waves or bulges, vertical joints should be caulked or provided with flashings, and fasteners should not break the surface paint. Proper maintenance of exterior paint and caulking is especially important with this siding. We recommend obtaining the model number and contacting the manufacturer to determine the history and proper maintenance of this siding.

19. **Cement Asbestos Siding:** This material is not considered to be particularly hazardous by many specialists. The asbestos is in a rigid form and is not normally friable. It should not be sanded or drilled as this could create a hazardous dust. Disposal or removal, if desired, should only be done by a qualified asbestos abatement contractor.
20. **Wood-Soil Contact:** Adequate clearance between soil and wood siding (typically 6 inches in new construction) should be maintained to prevent moisture or insect damage to wood siding and framing. It is important to avoid raising the soil level too close to the siding when gardening adjacent to the structure, and soils should slope away from the building. Fence posts should be separated from wood siding by an air space or flashing. Areas of potential wood-soil contact should be checked periodically as part of routine maintenance.
21. **Moisture-Related Damage:** Wood finish and framing materials are subject to damage and deterioration from exposure to moisture. Fungus growth, which causes decay (sometimes called "dry rot"), requires the presence of moisture. Relatively minor decay or rot can often be locally treated with a preservative. Significant damage typically requires replacement of the damaged material. A qualified structural pest control firm should be consulted for a determination as to the presence of fungus, decay, or other moisture related organisms.
22. **Embedded Siding/Trim:** The lower edges of wood siding or wood trim are often buried in concrete, masonry, or asphalt when patios, sidewalks, or driveways are installed. The proper procedure is to leave a sufficient gap between the wood and the surface below. Ideally, embedded siding should be repaired to prevent damage by decay or termites. In some instances, repair is neither practical nor necessary, such as with porches protected against rainfall which show no overt signs of damage.
23. **Improper Flashing:** Exterior flashings typically consist of sheet metal strips installed to prevent water entry at doors, windows, and trim connections. Damaged flashings can allow rain water entry and should be replaced. Most flashings are typically covered with wood trim and are not accessible to inspection.
24. **Remove Firewood:** Firewood should be stored well away from the building for fire safety and to prevent infestation by termites or other wood-destroying insects which are often present in firewood. Areas obscured by firewood are not accessible to inspection.
25. **Remove Plants/Trees from Building:** Vines, shrubs, or trees which touch the building should be removed or trimmed back periodically to prevent damage to the siding, eaves, or roof surfaces. Tree branches can damage the siding or roof, especially in high winds or stormy weather. Trees may also deposit substantial leaves and debris on the roof surface, resulting in poor drainage and roof damage.
26. **Plants Obscure Access:** Defects may be present in areas which are obscured by plant growth. Plants should be trimmed away from the building exterior periodically as part of routine maintenance. Plant growth can also damage the siding and trim resulting in the need for siding repair, caulking, or painting.
27. **Trim:** Exterior trim may need routine caulking to prevent moisture intrusion. Caulking is especially important along the upper edges of horizontal trim as water can be easily trapped in these locations, possibly causing decay.
28. **Eaves/Soffits/Fascia:** The eave is the portion of the roof framing which extends past the edge of the building. Exterior soffits are enclosed areas under eaves or other horizontal projections. Fascia is the wide trim board which runs along the roof edge. These areas are typically exposed to the weather and may require extra maintenance.
29. **Unvented Soffits:** Insufficient ventilation in any enclosed area may be conducive to moisture accumulation and decay. Soffit areas should be provided with ample vent openings covered with ¼ inch metal screening. Vent screening should not be blocked with paint.
30. **Exposed Beams:** Rafters, ridge beams, trellises, and decorative beams often extend past the edge of the roof, and are unprotected from the weather. It is important that the upper surfaces of such exposed beams be regularly painted to prevent water damage. These upper surfaces are typically not visible from the ground. The ends of exposed beams are subject to damage and it is sometimes necessary to cover these with sheet metal caps to prevent water entry and decay.

PORCHES - STAIRS - DECKS - BALCONIES

- 31. Concrete-Tile-Brick on Wood Framing:** Concrete, brick, tile, and other masonry stairs, landings, and decks are often supported by wood framing. A membrane is typically placed over the framing to prevent moisture entry and damage. The framing beneath should be checked regularly for signs of water penetration. Any cracks or openings in these surfaces should be caulked or filled to prevent water entry.
- 32. No Proper Ledger Flashing:** Sheet metal flashing is typically needed to prevent water entry at a ledger-siding connection. The ledger is the board which is fastened to the building to support the deck. Water entry or debris accumulation at this connection can lead to decay. These areas should be checked periodically and flashed or sealed as necessary.
- 33. Coating Damaged:** Coatings are often applied to wood-framed decks to provide a barrier to moisture entry. Such decks should be designed to drain freely. It is advisable to obtain the name of the installing contractor and the type of coating if possible, as this can be helpful should coating repairs be necessary. Minor cracks and openings can often be repaired by applying additional coating. Substantial damage to the coating may require complete removal and recoating of the surface. Coatings can obscure decay or moisture-related damage to the materials below and it may be advisable to consult a qualified pest control firm.
- 34. Settling:** Adjacent porches and walkways may tilt or settle away from the building, often because their footings or supports are not adequate. Rain water may enter gaps created by the settling, resulting in additional movement or possible framing damage. Any gaps should be caulked or sealed to prevent water entry. Any substantial settling which creates a hazard to foot traffic should be repaired.
- 35. Wood-Soil Contact:** See #20.
- 36. Painted Walking Surfaces:** Painted walkways, stairs, landings, and decks can be very slippery when wet. Self-adhering strips or non-slip paint should be applied to these areas as needed to provide safer walking surfaces.
- 37. Piers without Footings:** Pre-cast concrete pier blocks typically require poured concrete footings to provide adequate support for the piers and framing above. The standard procedure is to excavate a hole into previously undisturbed soil and to fill the hole with concrete to support the pier block. Deep footings are required if the piers are over filled soil or if the pier is on a sloping site.
- 38. Deck on Grade:** Wood decks directly over soils or patio slabs may have supporting members in soil contact, where the supports are not visually accessible. Such decking should be regularly examined by a qualified pest control firm, as there is a likelihood of infestation by wood-destroying pests or organisms.
- 39. Deck Maintenance:** Regular maintenance can substantially extend the life and serviceability of wooden decks and staircases. Debris which accumulates between the deck boards can trap moisture, and should be periodically removed. Treating the deck with a good quality wood preservative may improve its appearance and extend its service life. There are firms which specialize in power washing and treating decks with preservatives and fungicides.
- 40. No Secondary Drain:** In new construction a secondary drain, typically installed two inches above the lowest adjacent surface, is required to prevent deep flooding in the event the lower drain becomes blocked. These drains should be checked frequently for debris, especially if there are overhanging trees. If a deck or balcony wall drain becomes clogged, deep flooding and significant damage can occur.
- 41. Uneven Steps:** Individual steps in staircases should have a consistent height and depth for safe use. The difference between one step and any other step in the same staircase should not be more than 3/8 inch. Uneven steps are a potential trip hazard and should be corrected.
- 42. Guardrails:** Modern building standards call for railings at least 36 inches high for any deck, stair, or landing more than 30 inches above an adjacent surface, and for openings in the rail to be less than 4 inches in diameter. Large railing openings which may allow a child to fall through should be modified for safety. This standard was recently changed from 6 inches to 4 inches as it was found that small children can slip through a 6 inch opening.
- 43. Handrails:** Staircases with four or more steps should have handrails that are between 1-1/2 and 2 inches wide. Handrails should be placed and shaped so they can be readily grasped for safety. Handrails should be 34 to 38 inches above the leading edge of the stairway treads. Handrails should return to the railing or post or to the ground. Handrails should not end in a projection which could be hooked by clothing.

GRADING AND DRAINAGE

44. **Faulty-Marginal Grade:** A faulty grade (where the exterior soil level is above the top of the concrete or masonry foundation) can allow moisture penetration, leading to decay and termite infestation. The standard in new construction is for the top of the foundation to be at least 6 inches above the soil level. Removal of soil adjacent to the foundation can eliminate a faulty grade condition, but it may also direct surface water toward the foundation. Typical repair methods include: a concrete cap on top of the foundation to raise it above the exterior soil level, a concrete curb outside the foundation to act as a moisture barrier, or a low concrete or wood retaining wall to hold soil away from the foundation. A qualified contractor should be consulted as to the appropriate repair method.
45. **Improper Slope:** In general, the soil and other surfaces near a building should slope away from the foundation to prevent water entry beneath the building. Excessive water may cause foundation movement or other damage. Sloping soil away from the building may not be practical on the uphill side of a steep hillside site. Subsurface drainage systems may be necessary to correct such conditions for hillside homes.
46. **Low Foundation Vents:** Crawlspace require sufficient ventilation, typically provided by vents above or through the perimeter foundation. Vent openings must be above the adjacent soils to prevent the flow of surface water into the crawlspace and to prevent damage to any wood at the vent openings.
47. **Exposed Soil:** Exposed soil slopes should be planted with an effective ground cover to prevent erosion.
48. **Steep Slope:** Steeply sloped sites may be subject to erosion, slippage, or ground movement. A determination of the geologic stability of the site can be made only by a qualified geotechnical engineer or engineering geologist, and is beyond the scope of a home inspection.
49. **Signs of Poor Drainage:** Poor drainage may be caused by uncontrolled roof water, improper slopes (see above), or an unpredictable spring which can emerge after a heavy rain. It may be necessary to retain a qualified drainage contractor for corrective measures.
50. **Site Erosion:** Erosion typically indicates the slope of the soil is not sufficiently stable, lacking vegetation, retaining walls, or drainage systems which could prevent erosion. A qualified drainage contractor or civil engineer may be needed for corrective measures.
51. **Drainage System Added:** An underground drainage system appears to have been added to improve area drainage. We recommend that further information on this work be obtained, including the name of the installing contractor and the specifications for this work, if available.
52. **Surface Drains:** Surface drains can be effective in reducing ponding and controlling surface water around the building. Catch basins can be clogged with debris, and care should be taken to prevent obstruction of the drain openings. We suggest all surface drains be tested periodically by using a garden hose and observing the discharge location of the drains, if known. Rain gutter downspouts are often connected to underground drainage systems to prevent water from ponding adjacent to the foundation where it could adversely affect the soils supporting the house.
53. **Driveway Drains towards Garage:** Driveway rain water may flow onto the garage floor in wet weather. This area should be checked periodically and the drainage be improved if necessary.

WALKING SURFACES (Hardscaping)

- 54. **Decorative Pond:** Special care should be taken to prevent access to ponds by small children, and other potential drowning hazards. We recommend the local building department be consulted on requirements for safety barriers in these areas.
- 54.1 **Recessed Trash Can:** In the 1940s and 50s trash bins were sometimes recessed into walkways to hide the containers from view. These recessed bins typically have a step-on type lid which covers the opening in the walkway. Most of these bins are no longer in use and may become filled with rainwater, creating a potential drowning hazard to children. We recommend recessed trash containers be filled with soil, sand, or gravel, or removed for safety.
- 55. **Wood Dividers Damaged/Raised:** Wood divider strips used in concrete patios deteriorate with age and may protrude above the patio surface or disintegrate, leaving a gap and creating a tripping hazard. Deteriorated divider strips can be replaced with new wood or the gaps can be filled with new concrete.
- 56. **Painted Walking Surfaces:** Painted walkways, stairs, landings, and decks can be very slippery when wet. Self-adhering strips or non-slip paint should be applied to these areas as needed to provide safer walking surfaces.

RETAINING WALLS

- 57. **Cracks:** Cracks in masonry, concrete block, or concrete retaining walls may be formed by settlement or pressures of the soils retained by the walls. Minor cracking is common. Major cracking may indicate settlement or lack of adequate drainage systems behind the retaining wall.
- 58. **Displacement:** Displacement indicates that a retaining wall has moved from its original position. Leaning may indicate that retaining walls are not adequate to support the soil behind them. Substantial leaning indicates there is a potential for failure and retaining wall replacement may be necessary. Generally, new walls higher than 4 feet must be designed by a qualified engineer.
- 59. **Wood Retaining Walls:** Wood retainers are subject to deterioration from moisture or wood-destroying insects. Modern wood retaining walls are typically constructed with pressure-treated lumber. Redwood, though naturally decay-resistant, eventually deteriorates.

POOL - SPA

- 60. **Barriers:** Adequate barriers are necessary around a pool or spa to prevent entry by unattended children. Most jurisdictions require a 4 or 5 foot fence or other barrier and a self-closing gate. Some spas can be equipped with locking covers.
- 61. **Not Bonded:** The pool equipment is not properly bonded together as typically required for electrical safety. We recommend proper bonding wires and clamps be added to the pool equipment by a qualified electrician.
- 62. **Heater Vent Close to Wood:** The vent pipe leading from the heater is too close to combustible wood surfaces, creating a potential fire hazard. We recommend adequate vent pipe clearance be provided by a qualified contractor.

ROOF SURFACES

63. **Exposed Fasteners:** Nails or staples which secure the roof materials and flashings should not be exposed to the weather as they are potential sources of water entry, especially as they corrode or loosen with time. Any loose fasteners should be replaced. Exposed fasteners should be covered with a sealant or roofing mastic.
64. **Popping Nails:** If the nails which secure composition shingles are too short to penetrate the roof framing they may work loose with time and "pop" through the shingles above, leaving holes and allowing water entry. This condition is common when multiple layers of roofing are installed without using longer nails or staples, and is a significant defect. The nail holes can typically be sealed with roof patching compound or mastic.
65. **Pitch Too Low:** Pitch, or roof slope, is necessary for adequate drainage to avoid roof leaks in shingle or shake roofing materials. An insufficient roof pitch may result in a shortened life span, increased likelihood of roof leakage, and the necessity for roof repair. Most roofing materials can be installed on a lower than normal slope if special or extra underlayments are used. These underlayments may not be visible to inspection.
66. **Three-Layers of Roofing:** Many jurisdictions now limit the number of roofs to two layers. Excessive layers are heavy and can weaken the roof framing and may also significantly reduce the roof service life.
67. **Comp Shingles w/o Felt:** Composition shingles are now required to be installed over roofing felt (tar paper) to help prevent leakage. Roofs were once commonly installed over existing roof surfaces without a layer of felt beneath the new shingles.
68. **Wood Roofing:** Wood roofing materials are susceptible to fire damage unless specially treated for fire resistance. Chemical treatments which reduce flammability may lose their effectiveness with time and in some cases have shortened the potential life span of the roofing material. Upon roof replacement, we advise the installation of a roof with a class A fire rating.
69. **Shake Repair:** Every year a small amount of the shake surface is worn away by sun and weather. Shake roofs have a layer of felt (tar paper) under each course (row) to serve as a waterproofing barrier. Holes eventually develop in the shakes, exposing this felt to damage from the sun. Damaged shakes can be repaired by inserting a thin wood shingle, composition shingle, or piece of sheet metal beneath them to protect the exposed felt from the sun. This method can also be used to repair leaks. To repair a leak, the shingle (or metal shim) must be long enough to extend upward, beneath the shakes and felt in the row above. In general, it is best to avoid using nails when repairing a wood roof (except when renailling loose ridge shingles), as this can cause leakage.
70. **Remove Debris:** Leaf debris which accumulates on the roof surface has the potential to trap moisture, and also prevents a complete inspection of the roof surface. All debris should be routinely cleaned off the roof.
71. **Tile Underlayment:** Tiles are typically installed over roofing felt which prevents leakage if the tiles break or become dislodged. The water-tightness of the roof may depend on this felt which is largely inaccessible to inspection. To determine the condition of the felt, it may be necessary to retain a roofing contractor with special skills to lift a representative sampling of the tiles and inspect the felt beneath.
72. **Tile w/o Underlayment:** In the 1970s and 80s, many concrete tile roofs were installed without felt underlayments. This method is no longer approved and tile roofs without felt underlayments have a greater potential for leakage. The only effective repair may be to remove all the tiles, install plywood sheathing and roofing paper or felt, and reinstall the tiles.
73. **Built-Up Roofing:** A built-up roof or "BUR" (multiple layers of asphalt and felt) may have a gravel covering to protect the roof surface from the sun. These surfaces should be examined periodically to be sure the membrane is covered. It may be necessary to occasionally add gravel or redistribute existing gravel to maintain protection of the surface. Perimeter areas may be exposed and may wear out sooner than the covered portions. Exposed areas can be recoated every few years with hot or cold asphalt or other suitable coatings to extend the life of the roof surface.
74. **Blisters:** Blisters in built-up roofing are pockets of water vapor trapped within the roofing material. Blisters are typically caused by moisture or inadequate coverage of asphalt at the time of installation. Blisters may increase in size with time. Minor blistering is common in built-up roof systems. Major blistering is a significant defect which may necessitate roof replacement. Special care should be made to avoid stepping on blisters as this can cause leakage.
75. **Ponding:** Standing water or ponding on a roof surface may damage the membrane. Roofs should be designed to drain so that any water which remains can evaporate within 48 hours.

76. **Exposed Membrane:** The gravel is not properly embedded in several places leaving the membrane exposed. We recommend the gravel be properly distributed or new gravel or coatings be applied as needed to protect the roof from the sun.
77. **Coating Worn:** The roof surface is worn in several places. We recommend new proper protective coatings such as hot mopped asphalt or aluminized asphalt emulsion be applied to the exposed areas.
78. **Patching:** The roofing has been patched in several places, possibly indicating previous roof leakage and subsequent repairs. A history of patching and other roof repairs should be obtained, including the name of the repair contractor and the extent of any leaks and related damage.
79. **Moss Growth:** Moss and lichen may trap moisture which can damage the roofing material. Moss growth at the edges of the roof may be prevented by installing proper flashings (see #89). Substantial moss growth can be removed by a company that specializes in cleaning roofs.
80. **Near End of Life:** Roof surfaces which show substantial wear may need replacement even if no leakage is apparent. Several factors should be considered when deciding if a roof surface needs replacement. A qualified roofing contractor should be consulted to determine if a roof is repairable and, if so, at what cost. Ask if the roofer will guarantee any proposed repairs and how long the repair will extend the roof life. Roof leaks may cause damage before their presence is known. It is usually best to replace roof surfaces which show substantial wear.
81. **Roofing Improper/Nonstandard:** It is not unusual to find that aspects of a roof installation are technically incorrect or nonstandard. Many roofers install roofing materials and flashings according to what they believe is an industry standard or local custom. Nonstandard methods may be effective but may also result in a shorter than normal life span and may also void the manufacturer's warranty.
82. **Damaged Wood Shingles at Edges:** Older wood roof shingles may absorb water along the low roof eaves and are often damaged or decayed. The preferred practice is to cover these with metal flashing when a new roof is added. The eave framing in these areas is also subject to damage. Any damaged shingles or sheathing in these areas should be repaired.

ROOF FLASHINGS

83. **Mastic over Stucco:** The roof-to-wall connections are sealed with mastic applied over the stucco siding. This flashing method is common when a new roof is added to an existing roof and the older metal flashings are left in place. Whether these connections are watertight depends on the integrity of the stucco above the older flashings. The preferred method is to install new metal flashings. These connections should be checked periodically and carefully maintained by a qualified roofer.
84. **Stucco over Flashings:** Stucco has been applied over the roof-to-wall connections and over any metal flashings which may be present. The preferred method is to leave the metal flashings exposed to allow for easier roof surface replacement.
85. **Insufficient Siding-to-Roof Separation:** The siding on the walls above the roof is too close to the roof surfaces below. The proper method is to provide a space about one inch wide below the siding to prevent rain water flow against the siding and to keep these connections free of debris accumulation. We recommend the siding-to-roof connections be modified as needed to provide adequate separation.
86. **Cricket Needed:** A cricket or sheet metal flashing was not used behind the wide chimney to divert water and debris away from this area. We recommend the chimney area be monitored for debris accumulation or leakage and a cricket or metal diverter be installed to direct rain water away from this area.
87. **Center-Cut Valley:** The valleys of composition shingle roofing are often formed by running the shingles from one side of the valley over to the other side, and by cutting a straight line in the shingles which overlap at the valley. This cut should be approximately two inches above the center of the valley. Valleys which are installed with the cut in the center are more prone to leakage and indicate a non-standard installation.

88. **Nonstandard Valley:** The appropriate methods for creating a valley in a roof are typically specified by roofing manufacturers and building codes, but many nonstandard methods are often employed. A nonstandard valley can fail prematurely and require repair by a qualified roofing contractor.
89. **Exposed Sheathing:** The sheathing material below the roof at its edges should be protected against the weather. The lip of a rain gutter may accomplish this in some areas of the roof. At the rake edges (gables) a metal flashing or piece of wood trim is typically used. Metal flashings can also be used to cover the edges of wood sheathing below composition shingles.
90. **Moss Growth:** See #79.
91. **Water Flows over Edge Metal:** Some low slope roofs are constructed so that water flows over sheet metal at the lower roof edges. Changes in temperature cause the metal edge flashings to expand and contract, resulting in gaps which can allow water entry. The preferred method is to install the roofing membrane to avoid the flow of water over metal. The metal edges should be reviewed by a qualified roofer and redesigned or sealed periodically as needed to prevent leakage in these areas.
92. **Rusty Flashings:** Sheet metal flashings should be kept well painted with a good quality rust-inhibiting paint. The flashing should last as long as the roofing surface and rusty flashings should be replaced when a new roof is installed.
93. **Separations:** Exposure to heat and the normal expansion and contraction of metal may cause separations at metal flashings. All flashings should be checked annually and secured or sealed as necessary to prevent rain water entry. Plumbing vent pipes may need to be routinely patched at their flashing collars.
94. **Mastic:** Mastic is the general name for a thick roofing patching compound or cement. It is considered a temporary method to seal connections. Mastic dries out and cracks, typically requiring a new application every 2 to 4 years. Painting the mastic can help protect it from the sun and give a better appearance. The best procedure is to replace old metal flashings when a new roof is installed. It is common practice in some areas to leave old flashings in place and to cover them with mastic when applying new roofing over an existing roof surface.
95. **Stucco Topped Parapets:** Horizontal stucco surfaces may not shed water adequately and can allow water entry at cracks or connections. Sheet metal caps are typically used in commercial construction to protect the tops of parapet walls. Stucco parapets can be sealed with a roofing material or other waterproof coatings.
96. **Debris Traps:** Improperly designed or constructed roof connections may trap leaves and other debris. These areas require special maintenance to prevent debris from accumulating and causing leakage, and modifications should be considered.
97. **Low Curb:** Skylights should be installed on a curb which raises the skylight at least four inches above the plane of the roof unless the roof is sloped at an angle of 45 degrees or more, in which case the skylight can be installed in the plane of the roof surface.

ROOF DRAINAGE

98. **Rust:** Rust forms inside steel gutters as they age and rust spots or holes eventually appear on the undersides and joints of the gutters. Rusting typically indicates the gutters will soon need replacement. Coating or painting the gutter interior can reduce rusting. Holes can be patched with fiberglass mesh tape and asphalt emulsion. It is generally best to replace old gutters when a new roof surface is installed. Gutter joints and other connections should be checked regularly after rains and be caulked or repaired as needed.
99. **Missing Flashing at Eave Connection:** The connection between the rain gutter and roof edge should be provided with flashing, typically L shaped metal or plastic strips, to prevent water entry behind the rain gutters and damage to the roof eave framing.
100. **Roofing Extends over Gutter:** The roofing should extend only about 1/2 inch over the inside edge of the rain gutter. Roofing which extends over a substantial portion of the gutter may allow rain water to spill past the gutter during heavy rains.
101. **Gutter Spillage:** Signs of water flow over the gutter edge may indicate clogged gutters, improper gutter slope, or an insufficient number of downspouts.
102. **No Gutters:** The absence of gutters may lead to water splashing against the building, localized ponding, or inadequate control of site drainage.
103. **Membrane Fascia:** This is a roof drainage system where the gutterway is formed by the roof membrane as it wraps up over the higher perimeter roof trim or fascia. Rain water which collects behind the fascia ideally flows to the downspout openings in the roof surface. This portion of the roof typically experiences the greatest amount of wear because it is exposed to the full volume of rain water flow. The perimeter areas may need to be periodically coated with aluminized asphalt emulsion or other suitable coatings to provide protection from the sun and excessive surface wear.
104. **Surface Ponding:** Water is ponding on the roof surface in several places. Ponding can lead to premature wear and increases the potential for roof leakage. These areas should be monitored periodically for excessive wear by a qualified roofer. Low slope roofs should be designed to drain freely. No water should remain on the surface after 48 hours.
105. **No Secondary Drains:** A parapet is a wall that extends above the roof surface. If the primary drain opening in a parapet wall drain becomes clogged, deep flooding and substantial damage can occur. In new construction secondary drains, typically located two inches higher than the nearby primary drains, are required to prevent deep flooding if the lower drain becomes blocked. These drains should be checked frequently for debris, especially if there are overhanging trees.
106. **Shallow Gutterways:** The gutterways are too shallow and water can easily flow over the roof edge. We recommend the roof drainage system be modified as needed to function properly.
107. **Extend Downspouts Away:** Substantial water will flow from the roof and enter the foundation area unless it is directed away from the building perimeter, which is usually done by installing extensions or splash blocks for the downspouts. Subsurface drain piping may be needed in some areas to provide adequate drainage.
108. **Clear Debris:** Leaves and other debris which accumulates in downspouts or other drain system openings should be routinely cleared to prevent blockage in rain gutters or drainage systems. A blocked downspout can sometimes be cleared by water from a garden hose inserted in the upper end of the downspout.
109. **Subsurface Piping:** Rain gutter downspouts are sometimes connected to underground drainage systems to prevent water from ponding adjacent to the foundation where it could adversely affect the soils supporting the house. Catch basins or surface mounted drains may also be connected to this piping. Subsurface drain piping can become clogged with debris and should be checked periodically in rainy weather or by using water from a garden hose to be sure the drains are free flowing.
110. **Drainage System Maintenance:** Roof surfaces, rain gutters, downspouts, and subsurface drain lines should be checked regularly. Leaves and other debris should be removed as needed. Gutter corner joints and connections may need periodic caulking or sealing. Screens can be put at the downspout gutter connections to keep debris from blocking the downspouts. To check for adequate drainage walk around the building during or shortly after a heavy rain and observe the adequacy of the roof and area drainage systems.

FOUNDATION AND BASEMENT

- 111. Portions Inaccessible:** Access may be obstructed by insufficient clearance beneath the floor framing, by ducting, pipes, stored items, finished wall surfaces, water, or other obstructions to visual examination. Wherever possible, access should be provided to these areas so an inspection can be made. With access and opportunity for inspection, defects may be found in these areas which were inaccessible.
- 112. Cracks:** Cracking is common in concrete or masonry foundations. Minor cracks caused by shrinkage or settling can be found in even relatively new foundations. Moderate or larger cracks may indicate ongoing settling or movement and the eventual need for underpinning or foundation repair. There is no way to determine if a crack will grow in size or if new cracks will form. Most large cracks were once small. The best way to estimate the likelihood of future movement may be to monitor the number and size of cracks over a period of time.
- 113. Rotation:** Many older foundations do not have reinforcing steel or deep concrete footings. The weight of the building on the outside edge of the foundation wall causes it to lean. The amount of leaning can be influenced by damp soil beneath the foundation walls from poor drainage. This movement may continue until foundation repair, reinforcement, or replacement becomes necessary.
- 114. Efflorescence:** Efflorescence is a white powdery deposit which occurs on masonry or concrete. Efflorescence indicates the presence of moisture in contact with the masonry or concrete. Minor efflorescence is common even in new construction. Substantial efflorescence indicates a defective drainage condition.
- 115. Deterioration:** Concrete deterioration and spalling are usually the result of prolonged moisture penetration. As moisture moves through the concrete and dries on the surface, mineral salts dissolved in the water form crystals which expand and cause surface crumbling (spalling). Minor surface deterioration is common in older foundations. With continued moisture penetration over many years, the concrete may deteriorate to the point where replacement becomes necessary.
- 116. Poor Quality Concrete:** Concrete is a mixture of sand, cement, and rocks (aggregate). Too much rock was used in many older foundations, making it porous and weak. Round beach sand was often used instead of sharp sand from a quarry. Old, poor quality concrete is susceptible to moisture entry and will often crumble and deteriorate with age, causing settlement. Some building departments do not permit the installation of earthquake bolts into poor quality concrete. In order to adequately reinforce these buildings against seismic activity it may be necessary to install new concrete foundation walls.
- 117. Capped:** Concrete foundation caps are typically installed on top of an existing foundation wall by pest control companies to prevent moisture entry and damage in the wood framing above the foundation. Modern foundation caps are typically steel reinforced and should improve the strength of the foundation system. They should not, however, be considered as strong as a new foundation.
- 118. Engineered Foundation, Repairs:** Many new foundations are engineer-designed. Older foundations may have engineered repairs, modifications, or additions. For information on such work the designing engineer should be consulted. All building permits, plans, and specifications for engineered installations should be obtained. Where possible, determine if the engineer was present at the site and if his/her specifications were followed.
- 119. Cracks:** See #112.
- 120. Below Grade Floors:** Floors which are below the exterior soil level may be subject to water or moisture entry, especially in very rainy weather. It is not unusual to find occasional or unexpected water entry in below grade areas which have been dry for years.
- 121. Wood Basement Floor:** There is a potential for hidden decay or termite damage beneath wood floors when they are placed directly over concrete or soil. A destructive examination may be the only way to determine the condition of the inaccessible areas. A qualified pest control firm should be retained to examine these areas. If the wood floors have been in place for many years and there are no obvious signs of damage or pest activity, the odds are good that all is well.

- 122. Floor Drains:** Floor drains are not normally tested during an inspection. We suggest the floor drains be checked for blockage periodically and that water be poured into floor drains to prime any traps which may be present. A floor that emits an odor of sewer gas may be connected to waste system piping and water which seals the trap may have dried out. The drain trap (U-shaped fitting that holds water) can be filled by pouring water into the drain, and the trap seal can be maintained by pouring a small amount of mineral oil into the trap over the water to reduce evaporation.

FRAMING

- 123. Moisture Damage:** Wood can be damaged by wood-destroying insects or from prolonged contact with moisture. To determine the presence of pest damage, decay, or other wood-destroying organisms, we recommend a thorough inspection be performed by a qualified pest control firm.
- 124. Insect Pest Damage:** Wood can be damaged by wood-destroying insects or from prolonged contact with moisture. To determine the presence of pest damage, decay, or other wood-destroying organisms, we recommend a thorough inspection be performed by a qualified pest control firm.
- 125. Wood-Soil Contact:** Adequate clearance between soil and wood should be maintained to prevent moisture or insect damage to wood supports and framing. Wood which has been in soil contact should be examined by a qualified pest control operator upon clearing the soils away from the wood.
- 126. Stains:** Moisture stains indicate previous water penetration. Stains are commonly found around bathroom and kitchen waste piping or at the building perimeter and may also indicate previous leaks which have since been repaired. Any indications of active water entry or moisture-related damage should be promptly repaired by a qualified contractor.
- 127. Outdated Framing:** Several aspects of the substructure framing are outdated and would be considered substandard according to modern construction practice. This framing may need modification during future seismic upgrading.
- 128. Piers without Footings:** Poured concrete footings are typically required beneath pre-cast concrete piers to secure the pier in place and to provide a wide surface area to carry the weight of the framing above.
- 129. Insulation:** Floor framing insulation is important over unheated basements or crawlspaces in cold winter areas. In areas with moderate winters, flooring insulation is preferred but not always required. Insulation obscures portions of the floor from inspection, and there may be hidden defects in these areas.
- 130. Inverted Vapor Barrier:** Batt insulation typically has a paper or foil vapor barrier on one side to prevent the movement of moist air from the house interior into the wood framing. The vapor barrier should be installed facing the heated area, typically downward in an attic or upwards in floor framing. The general rule is the vapor barrier should not normally be seen from either the attic or crawl space areas. It is probably incorrect if the paper or foil can be seen. One method to prevent moisture accumulation when the barrier is inverted is to cut slits in the paper or foil backing. In moderate climates, vapor barriers typically have little effect, and correction of an inverted vapor barrier is usually not necessary.
- 131. Stucco without Sheathing:** This is a framing method, sometimes called "line-wire stucco," which was popular during the 1940s and is still in use in some areas today. The stucco siding is applied directly over the building paper which is supported on horizontal wires secured to the framing, omitting the wood board or plywood sheathing found in both older and most newer buildings. The absence of sheathing may make the building more vulnerable to seismic forces. Plywood sheathing can often be added to the inside of the walls to reinforce them. A qualified seismic engineer should be consulted to determine if, where, and what type of reinforcing is advisable.
- 132. Stucco over Fiberboard:** Fiberboard has little strength and produces conditions similar to "line wire stucco." See #131.

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- 133. Bracing Panels:** The installation of plywood bracing (often referred to as "shear paneling") on wall framing provides earthquake and wind resistance. It is typically used on the walls between the foundation and floor framing and around garage door openings. The panels should be nailed at all edges and at the intermediate members. It may be necessary to add blocks between the vertical studs to get bearing on all edges of the plywood. Minimum nail spacing is usually 6 inches and engineers often recommend nailing at 3 or 4 inches for greater strength. Ventilation should be provided in each stud space when shear paneling is added to the inside of exterior subarea walls. Ventilation is usually provided by drilling 2-inch diameter holes in the plywood at the top and bottom of each stud bay.
- 134. Anchor Bolts:** The board (sill plate) on top of the concrete foundation is bolted in place to resist displacement during earthquakes and high winds. When a house is not bolted, it is sometimes possible to add bolts or other hardware that accomplishes the same purpose. If the concrete is of poor quality or the foundation is brick this may not be possible. The modern standard is for bolting at least every six feet, and with bolts within the last 12 inches of each piece of sill plate. In Seismic Zones 3 and 4 special 3/16 inch thick plate washers measuring 2 x 2 inches square are now required. Houses greater than one story or on hillsides may require more bolts. Many older houses have fewer bolts than would be recommended by modern standards.
- 135. Wedge Anchors:** Expansion or wedge type foundation anchor bolts may be subject to loosening with time and periodic vibration. We recommend they be checked annually and tightened as necessary. In the course of future anchor bolt installation, we recommend adhesive bolts be used, as these are less susceptible to looseness from vibration.

SUBSTRUCTURE AREA

- 136. Ventilation:** Under-floor areas should be provided with ventilation openings which have an area not less than 1 square foot for each 150 feet of under-floor area. Openings should be provided close to the corners and should provide cross ventilation. The vent openings should be distributed equally along the length of at least two opposite sides and should be covered with ¼ inch wire mesh. Four-by-fourteen inch vents are typically installed every 6-8 feet. There are many ways to provide ventilation and the best method should be decided after consulting a qualified contractor or the local building department. If natural cross-circulation is not obtainable with vent openings, it may be necessary to install a mechanical venting system with fans, ducts, and a soil vapor barrier (see below).
- 137. Soil Vapor Barriers:** Vapor barriers are sheets of plastic laid over damp soils in a crawlspace, and are intended to reduce the humidity of the crawlspace by trapping moisture against the soils. For such a vapor barrier to be effective, it must be tightly sealed to the foundation and any interior piers. The practical benefit of most soil vapor barriers is simply to allow easier access through an otherwise damp crawlspace.
- 138. Louvered Vents:** Louvered vents may reduce the flow of air and sunlight necessary for good subfloor ventilation. Screened vents with ¼ inch corrosion-resistant mesh are preferred for proper ventilation.
- 139. Expansive Soil:** Expansive soils typically expand when wet and shrink upon drying, which can cause seasonal movement in the foundations, walls, and floors. Modern foundations designed for expansive soils have piers which penetrate the soil to a deeper level where there is a more consistent moisture content. Maintaining a consistent soil moisture content by periodic watering of adjacent planted areas in summer, and avoiding excessive subarea dampness in winter can help reduce seasonal movement. We are not qualified to determine soil types or conditions. For a determination of the soil type and conditions in this area, a geologist or soils engineer should be consulted.
- 140. Moisture Noted:** Minor periodic moisture beneath many structures is common. Substantial or continuous water entry can damage the concrete (see #115) or cause wood decay or soil erosion and should be eliminated. It may be necessary to install a drainage system to correct a significant moisture problem.
- 141. Debris:** Wood scraps, plant materials, and other debris containing cellulose may attract and support termite activity beneath the house and should be removed from subarea soils.
- 142. Embedded Form Wood:** The wood form boards and stakes for a poured-concrete foundation are sometimes partially left in place. These boards should be removed, as they encourage termite activity.

- 143. Unsupported Cut in Grade:** The soil in a crawlspace is often cut back, forming a wall or "cut" in the soil surface which is steeper than the original slope. With many types of soil it is necessary to support these cuts with a retaining wall to hold the soil in place. In newer construction the local building department will often specify which cuts require retaining wall support or a decision from a qualified engineer. Older cuts should be examined periodically for indications of erosion or soil slippage.
- 144. Sump Pump:** The presence of a sump pump is an indication of inadequate drainage. Sump pumps should be checked regularly to be sure they function properly. A failed sump pump can lead to basement or subfloor area flooding. If a sump pump is necessary, it is prudent to have a spare pump on hand.

ELECTRICAL SERVICE

- 145. In Tree(s):** Tree trunks and branches can damage overhead electrical wiring. The wiring between the main power pole and building is often the property of the local utility provider who, in some cases, trims trees away from the wires. Before working near these wires, the power company should be contacted to disconnect the power.
- 146. Worn Service Drop:** The wiring between the power pole and the building is typically owned and maintained by the utility company. The company should be contacted and urged to repair or replace any damaged or frayed wires.
- 147. Too Low:** Exterior overhead wiring should be at least 10 feet above a pedestrian walkway, 12 feet above a driveway, and 18 feet above a swimming pool or street. Overhead electrical wires should also be no closer than 3 feet from the side or bottom of any openable window. Wires passing over a low to medium slope roof should clear the roof by 8 feet. There are some exceptions to these rules, and the utility provider typically has jurisdiction in such matters.
- 148. Weatherhead Wiring - Improper/Worn:** The connection between the utility company's wires and the wires at the weatherhead should be insulated and secure. The conductors entering the weatherhead should be in separate holes of an insulating bushing, and should be arranged with a "drip loop" so water does not run into the service mast. Wiring running to a power pole is typically the property of the local utility company and the company should be contacted regarding damaged wiring. Have an electrician examine any worn or damaged wires near the weatherhead for repair or replacement.
- 149. Panel Obstructed:** The meter and main panel should be accessible. At least 3 feet of clearance should be maintained in front of the panel to provide for safe operation and repairs.
- 150. Meter Not Sealed:** Electric meters (and sometimes certain covers on the service panel) are sealed by the utility company to prevent tampering. A broken or missing seal on the meter or other panel components may indicate an attempt to bypass the meter or past alteration of the service without notification to the utility provider. We recommend the utility company be contacted to reseal the meter.
- 151. Over Six Breakers:** Main panels should be designed to provide a maximum of six individual hand operations to shut off all power to a building to provide convenient electrical shutoff in the event of an emergency (USA rule; Canada allows only one main shutoff). More than six breakers indicates a nonstandard modification which should be corrected.
- 152. Lever Main - No Inside Cover:** Lever operated, fuse protected panels and equipment disconnect boxes have a disconnect lever located on the outside of the panel and it is not necessary to open the panel cover to shut off the power. We recommend locks be installed on the covers of the this type panel or box to keep persons from opening the cover and coming in contact with the energized "hot" components inside.
- 153. Federal Pacific Panels:** Federal Pacific Stab-Lok brand panels are considered outdated and potentially hazardous by many experts. Panels of this type and other discontinued brands may not operate safely in some conditions. The installation of a new panel may be the only way to eliminate potential risks associated with outdated panels.
- 154. Service Capacity:** In older houses it is not uncommon to find a 30-amp or 60-amp service. A 30-amp main capacity is not adequate and should be upgraded. Sixty-amp services are generally considered to be minimal but may suffice if there is no air conditioning and if gas is used for the major appliances. The minimum capacity allowed for a detached dwelling since 1960 is 100-amps. Modern single family residences typically have an electrical capacity of 125-amps. Larger new houses may have capacities of 200-amps or more.

- 155. 120-Volt Only:** Older electrical services providing only 120-volt service were once common, but are not adequate to provide power for a normal number of modern appliances. Even if the house wiring has not been altered since original construction, the service will need to be upgraded.
- 156. Grounding & Bonding:** Modern electrical services are typically grounded to the water piping, a driven rod in the earth, and/or steel rods embedded in the foundation. Older electrical services were typically grounded only to the water piping. In many houses, a grounding conductor is visible at the main panel, but it is not possible to locate the grounding connection. When metal water piping functions as the ground, and the main incoming pipe has been replaced with plastic, the grounding system should be upgraded with a driven rod. The gas piping and other metallic interior piping should be bonded to the grounding system. Bonding (a secure joining together to maintain electrical continuity) is typically done at the water heater, but is often not present in older homes. When a dielectric union is installed between dissimilar metals (such as copper and steel), bonding should be restored by a jumper wire. Though the jumper may reduce the ability of the dielectric union to prevent corrosion, electrical safety is a greater priority.
- 157. Ground Wire Unprotected:** The grounding wire between the service panel and a grounding rod or pipe should be protected against mechanical damage. The wire can be installed in conduit or can closely follow the building surface to reduce the possibility of damage.
- 158. Loose Clamp:** The wire to the grounding rod or pipe should be firmly secured with a clamp made for this purpose.
- 159. Ground Conduit Not Bonded:** When a metal conduit is used for protection of the grounding wire, the conduit itself must also be bonded to the grounding rod. Lack of bonding can cause the grounding wire to fail.
- 160. Rod Not Fully Driven:** Grounding rods should be fully driven into the earth. They are typically 8 feet long. If the rod has been cut or not fully driven, it will not be as effective as it should be. It is possible to correct inadequate grounding by adding a second grounding rod.
- 161. Service Panel Not Bonded:** The service panel enclosure, neutral wires, and grounding wires should be bonded (securely connected together) in the main service panel.

DISTRIBUTION PANELS

- 162. Fed Pacific:** Concerns have been raised over the safety of some models of Federal Pacific circuit breaker panels. In these and possibly other brands of older breaker panels, the breakers may malfunction, failing to actually disconnect the power when turned off, or failing to go back on properly once they have been tripped. The installation of a new panel may be the only way to prevent possible problems which may occur in older outdated models.
- 163. In Clothes Closet:** Since the early 1980s, the installation of electrical panels in clothes closets or other areas where flammable materials might be stored has not been permitted by most building departments. Clothing or stored belongings may also block panel access in an emergency. Clearance should be maintained between the panel and any stored items.
- 164. Panel Inaccessible:** The covers of electrical panels should be removable, and should not be blocked by shelving, personal property, or other building materials. At least 3 feet of clearance should be maintained in front of electrical panels to provide for safe operation and repairs.
- 165. Painted Over:** To avoid wall damage we do not remove panel covers which are adhered to the wall with a heavy coat of paint. We recommend access be provided and the panel wiring be examined.
- 166. No Inside Cover:** The energized wiring and terminals inside modern panels should not be accessible when the panel cover is open. The "deadfront" is an inside cover designed to protect panel users from electrical shock when operating a breaker or replacing a fuse. Missing covers should be replaced. Older fuse panels sometimes do not have deadfront covers, and panel replacement should be considered as a safety upgrade.
- 167. Opening(s) in Face:** The inner covers of circuit breaker panels have twist-out tabs which are removed for each breaker location. Unused openings can allow contact with the live electrical components behind the panel cover. Clips can be purchased to fill such openings. A similar danger exists in fuse panels with empty fuse sockets. Empty sockets should be filled with fuses even though not in use.
- 168. Scorching/Melting:** There are indications of excessive heat at wiring connections in this panel. This condition indicates a potentially hazardous defect requiring immediate correction. We recommend this panel be examined and repaired if necessary by a qualified electrician.

- 169. Rust/Corrosion:** Rusting indicates the panel may not be adequately moisture-tight. Minor rust is not unusual in exterior panels. Substantial rusting can cause the panel to malfunction, and should be reviewed by a qualified electrician.
- 170. Open Knockout Hole(s):** Panel boxes have knockouts in the sides, bottom, and top which can be removed to provide holes for the wires to enter. Open unused holes should have proper covers to maintain the fire integrity of the panel and to keep insulation, animals, or insects out of the panel.
- 171. Wires Unprotected at Hole(s):** Wires should be provided with bushings and/or strain relief clamps where they enter panel box holes or openings.
- 172. Wrong Brand/Type Breaker:** Many brands of circuit breakers can be made to fit within some electrical panels, but only the types for which the panel has been tested and approved should be used. Modern panels often have a rating sheet inside the panel listing the types and compatible brands of breakers that are acceptable. Using other breakers increases the likelihood of arcing and other electrical hazards.
- 173. Double Wiring:** Also known as "double lugging," the attachment of more than one wire to a single breaker, fuse, or bus bar terminal can cause looseness, arcing, and overheating. Most terminals are designed to hold only one wire, and more than one may be hazardous. In many instances, repair is relatively simple. A full panel may indicate the need to upgrade the equipment.
- 174. Missing Handle Ties:** When two breakers are used to protect a single 240 volt circuit, the breaker switch handles should be mechanically connected to operate in unison. A simple connector can be installed by an electrician to insure that both breakers trip at the same time. Handle ties are also required when two breakers protect the double circuit for a combination dishwasher and disposer receptacle.
- 175. Fused Neutrals:** Fuses are installed on both hot and neutral wires in some older fuse panels. While this might seem to provide added safety, the opposite is true. If the neutral fuse blows, the circuit would be "hot" but would appear "dead," creating a hazardous condition. This condition indicates an outdated and potentially hazardous system. Fused neutral panels often also have exposed electrical connections, creating an additional safety hazard. We recommend all old, outdated, or unsafe panels be replaced.
- 176. Oversized Breakers/Fuses:** Fuses and circuit breakers are rated to allow a specific amount of current in the circuit before tripping or burning out. When the wrong size breaker or fuse is used, there is a potential for the wiring to overheat, creating a fire hazard. For example, a 14-gauge wire is rated to safely draw 15-amps and a 15-amp fuse or circuit breaker on this circuit will blow when overloaded. Using a larger breaker or fuse, such as one rated 20- or 30-amps, will not provide adequate protection.
- 177. Same Pole Multi-Wire Circuit(s):** Multi-wire branch circuits are pairs of 120-volt circuits which share a common neutral wire. To prevent overloading the neutral, the pairs of hot wires must originate from opposite poles in the panel (so there is 240-volt potential between them). This condition can typically be corrected by relocating the wires to different breakers or fuses within the panel.
- 178. Ground-Neutral Improper:** Subpanel neutral wires should be isolated from the panel enclosure and grounding wires to prevent current from being carried on the grounding wires and components. Grounding wires should not connect to the neutral wires, and should have their own bus or terminal attached to the panel. Older subpanels installed before the use of 3-hole outlets may need new feed wires to provide separate paths for the neutral and grounding wires.
- 179. Loose Wiring near Panel:** Wires entering panels and boxes should be secured to adjacent framing within 12 inches of the panel or box. Loose wiring may indicate installation by a non-professional.
- 180. Excess Wire in Panel:** An excessive amount of wiring in a panel can cause over heating and wire damage, creating a potentially hazardous condition.
- 181. Damaged Insulation:** Damaged wiring insulation is potentially hazardous. Damaged wiring should be repaired or replaced by a qualified electrician.
- 182. Anti-Oxidant Not Visible:** Anti-oxidant paste should be applied to all aluminum wiring terminations to prevent corrosion in the wiring. Corrosion can cause poor connections and overheating. In some cases, the antioxidant coating may be present but not in sufficient amount to be readily visible.

- 183. Loose End Wire(s):** Loose wires can come in contact with energized components, creating a shock or fire hazard.
- 184. Substandard Wiring:** The presence of substandard wiring indicates modification by a non-professional, and there may be other defects in concealed areas. In the course of repairs and updating, we recommend the wiring system be reviewed by a qualified electrical contractor.
- 185. Excess Cable Sheathing:** Excessive wrapping or sheathing on electrical cables is substandard practice and may indicate work by a non-electrician.
- 186. Improper Wire Color Coding:** We observed wiring which is not the proper color for its use. Improper color coding may indicate modifications by a non-electrician. We recommend the panel wiring be properly installed by a qualified electrician.
- 187. Cover Pressing on Wiring:** The wiring in this panel is too close to the front and the panel cover presses against these wires, creating a potentially hazardous condition. We recommend the wiring in this panel be properly installed by a qualified electrician.

WIRING & FIXTURES

- 188. Knob and Tube:** Most houses prior to the 1950s were wired with knob and tube systems. In some building jurisdictions, knob and tube wiring with plastic insulation was used until the 1960s. Existing knob and tube wiring may be safe if it is not overloaded. Over time, the brittle insulation on older wire breaks down, and the wire may sag between supports. The splices in knob and tube systems are soldered, and overloads (see #176) can melt the solder, causing loose connections and a possible fire hazard. Knob and tube wiring may not be appropriate for circuits and appliances requiring grounding. It is generally best to install new wiring for such circuits. Splices into knob and tube systems are commonly improper.
- 189. Unprotected Wiring:** Wiring in living areas, storage areas, or accessible exterior locations should be protected from damage. Protection is typically achieved by enclosure within wall cavities surfaced with gypsum board (sheet rock) or paneling, or by placing the wiring in rigid or flexible metal conduit. Metal-sheathed cable (BX) or flexible metal conduit can be used in dry areas. Moisture-tight conduit should be used at exterior locations.
- 190. Exposed Splices:** All electrical connections of non-metallic cable ("Romex") or conduit should take place in properly covered junction boxes. Visible splices are potentially hazardous and an indication of substandard work.
- 191. Loose Wiring:** Electrical wiring should be properly supported to prevent wiring damage at the attachments. We recommend all loose wiring be reviewed by a qualified electrician and proper supports be provided where necessary.
- 192. Aluminum 120-Volt Wiring:** Aluminum wiring in general lighting and receptacle circuits is prone to mechanical failure and overheating at its terminations. Special connectors should be used. Outlets and switches rated for aluminum can sometimes be installed on an older aluminum wire system. Systems with aluminum 120-volt branch circuit wiring should be examined in depth by a qualified electrician familiar with proper aluminum wiring methods.
- 193. Extension or Zip Cord Wiring:** Extension cords, lamp cord wiring (zip cord), and other temporary wiring should not be used for permanent installations. Such wiring should be replaced by a qualified electrician.
- 194. Abandoned Wiring:** Apparently abandoned wiring should be removed by a qualified electrician to prevent its being accidentally energized and creating a hazardous condition.
- 195. Missing Box Covers:** Electrical junction boxes are often left uncovered either through simple omission or because the box is too small to hold all the wires. Over-full boxes may need extensions or to be replaced with a larger size. All boxes should be properly covered for electrical safety.
- 196. Boxes Missing Knockouts:** Outlet, switch, panel, and junction boxes often have holes for the wires to enter. These holes should be provided with special covers if they are not used for wiring.
- 197. Wires Unprotected at Holes:** Wires are not properly installed at electrical box openings. We recommend proper bushings and/or strain relief clamps be installed where wires enter box holes or openings.
- 198. Paddle Fan Added:** Ceiling paddle fans typically require special boxes for support, and should not be supported solely by a lighting receptacle box. In most installations, an inspector cannot directly view the box supporting the fan. To determine if a paddle fan is properly supported, it may be necessary to consult a qualified electrician.

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RECEPTACLES

- 199. Reverse Polarity:** Reverse polarity is a defect where the hot and neutral wires to an outlet are reversed (or cross wired). This is a potential safety hazard, but is usually easily corrected. The smaller outlet slot (brass terminal) should be connected to the hot wire (black) and the large slot (silver terminal) to the neutral wire (white). The standard since 1948 has been to provide electrical equipment with polarized plugs.
- 200. Insufficient Outlets:** Older buildings often have insufficient electrical receptacles by modern standards. We recommend the anticipated electrical use be reviewed by a qualified electrician to determine where additional outlets are needed. Appliances, such as refrigerators, computers, microwave ovens, and clothes washers typically have three-prong plugs and need conveniently placed three-hole grounded outlets. Modern kitchens require receptacles every 4 feet along countertops and within 24 inches of the kitchen sink. Each individual countertop area should have at least one receptacle.
- 201. Improper Floor Type:** Floor mounted receptacles should be a special type designed support a person's weight. Standard outlets can break easily when stepped on, creating a hazardous condition.
- 202. Three-Hole Adapters in Two-Hole Outlets:** These adapters allow a three-prong plug to be installed into a two hole outlet and may not provide an effective ground connection. A proper grounding wire and a three hole grounded outlet should be installed to be sure safe grounding is provided for all appliances with three prong plugs.
- 203. Ungrounded 3-Hole Outlets:** Also known as an "open ground," this defect is common in older buildings and typically occurs when 2-hole outlets are replaced with 3-hole types without adding a grounding wire. Properly installed three-hole outlets have a third grounding wire and are necessary for appliances with three-prong plugs. Using a three-prong plug in an ungrounded three-hole outlet is potentially hazardous. The accepted means of correcting this condition include replacement with a 2-hole receptacle, installation of a proper grounding wire to the outlet, or replacement with a GFCI receptacle.
- 204. GFCI Protection:** Ground Fault Circuit Interrupters are breakers or receptacle outlets designed to protect against electrical shocks. In recent years most jurisdictions have required ground fault protection for outlets in bathrooms, exteriors, basements, and garages (except those in a designated appliance location, such as for laundry equipment). Recent regulations also require GFCI breakers for kitchen countertop outlets within 6 feet of a sink and for wet bars. A single GFCI receptacle may be used to protect other outlets downstream from it on the same circuit. GFCI outlets and breakers have test buttons which should be operated periodically to assure the devices are functioning properly.
- 205. Line-Load Reversal:** GFCI outlets have a second set of terminals to feed other outlets on the load side of the outlet, and provide GFCI protection for them. If the line and load connections are reversed (a common defect) the GFCI test button operates properly, and the downstream outlets are be protected, but the GFCI outlet itself is not protected, which could lead to the assumption that a safety device is operable when it is not. This condition can be easily corrected by a qualified electrician.
- 206. Improper Exterior Electrical Components:** Wiring, boxes, outlets, switches, and light fixtures which are exposed to weather must be rated for such a location to prevent water entry, hazards, or damage.
- 207. Electric Heater Safety:** Electric wall and baseboard heaters should not be covered by draperies, furnishings, or other items. Proper clearances vary by make and model. We recommend the appropriate owner's manual be consulted for clearance requirements. Care should be taken to prevent electrical cords from falling into the heaters. In modern construction, electrical outlets are not allowed directly above a baseboard heater. Electric wall or baseboard heaters may have hot surfaces, and barriers may be needed to prevent small children from contacting them.

GAS HEATERS

- 208. Gas Heater in Bedroom:** Many jurisdictions do not permit the installation of older type gas heaters in bedrooms. These furnaces get very hot and can be a fire hazard if combustibles like fabric are placed nearby. Gas heaters also need air from the room to burn. Any obstruction to the air flow can cause poor combustion and spillage of hazardous fumes into the room. We recommend this unit be disconnected and a safer heat source be provided for this space.
- 209. Direct Vent:** Direct vent wall furnaces are relatively modern heaters which vent directly through the exterior wall. These heaters are considered safer than other kinds because they draw the air used for combustion directly from the building exterior instead of from the living space as do other heaters. Some heaters of this type have failed prematurely by developing large cracks in the heat exchangers. These cracks could allow fumes to enter the living space. Direct vent wall furnace heat exchangers should be checked periodically. These units can get very hot and special care should be taken to keep children and combustible items well away from them when they are in use.
- 210. Outdated Space Heaters:** Gas room heaters need regular cleaning and maintenance. They may not function safely when the burners or grills are obstructed by dust, lint, or personal property. Special care should be taken to keep children and combustible items well away from potentially hot surfaces. Room heaters should be routinely inspected for safety by the utility provider or a heating specialist. Replacement of old outdated gas "room" or "space" heaters should be considered for safety.
- 211. Wall/Floor Furnace Safety:** Gas wall and floor furnaces need periodic cleaning and may not function properly when the burners or grills are obstructed by dust, lint, or personal property. These furnaces should be routinely inspected for safety by the utility provider or a heating specialist. Special care should be taken to keep children and combustible items well away from potentially hot surfaces. Floor furnaces have hot surfaces and barriers may be needed to prevent small children from touching them.
- 212. Inadequate Combustion Air:** Inadequate air supply can cause incomplete fuel combustion and may produce hazardous byproducts of combustion, such as carbon monoxide. A furnace or water heater compartment should have two air openings leading to the outside, one near the floor and the other near the compartment ceiling. These openings should provide be at least one square inch of ventilation for each 1,000 BTUs input listed on the appliance rating plate. Combustion air openings should be screened, except for those terminating in an attic. Screening may require periodic cleaning to prevent blockage from dust buildup. Openings should not be blocked by personal property.
- 213. Heating Adequacy in Habitable Rooms:** Most jurisdictions require that all habitable rooms (not bathrooms) are provided with a permanent heat source capable of maintaining a temperature of 70 degrees three feet above the floor. Older buildings in moderate winter areas may be heated by a single heat source, such as a space heater or floor furnace, and the doors to individual rooms must then be left open for them to have heat. Portable electric heaters are often used to provide heat to unheated bedrooms. Care should be taken to assure the electrical system is adequate to support the electrical load of multiple portable electrical heaters if they are needed.
- 214. Gas Connector Outdated:** Brass gas connectors, copper tubing, and aluminum tubing are no longer approved for use as they may be subject to damage or gas leakage. We recommend all outdated gas connectors be replaced when the equipment is next serviced. Proper gas connectors are relatively inexpensive.
- 215. Rigid:** Rigid gas supply piping is more likely to leak or break in an earthquake. We recommend installing modern flexible gas connectors to provide a safer connection between the rigid piping and gas appliances.
- 216. No Pilot Safety:** A pilot safety control is an important safety device designed to prevent gas entry into the living space if the flame in a gas heater is extinguished. A pilot safety control device has a thermocouple and generator which closes the gas valve automatically when no pilot is present. We recommend a pilot safety control valve or a new central heating system be installed.
- 217. Recommend Servicing and Evaluation:** Heating, ventilating, and air conditioning equipment requires routine servicing for continued safe and efficient operation. Significant defects may be revealed during a thorough evaluation, especially with older systems.
- 218. Do Not Store:** The air spaces near heating equipment must not be impeded or the equipment could be deprived of necessary air. Flammable materials must be kept away from heating equipment.

ENVIRONMENTAL

- 219. Asbestos:** Asbestos is found on most gas heating systems installed before 1978. Exposure to asbestos may be a health hazard and should be avoided. It may be possible to significantly reduce or eliminate the dispersal of asbestos fibers by painting the material. Removal or containment of these materials should only be done by properly trained and equipped professionals. Contractors in various trades such as flooring, roofing, heating, plumbing, or electrical may require asbestos abatement at additional expense prior to performing repairs, replacements, or modifications. For a determination as to the need for, or costs of abatement, a qualified asbestos abatement contractor should be retained. The presence of asbestos can only be determined by laboratory analysis, which is beyond the scope of our inspection.
- 220. Hazardous Materials:** Various potentially hazardous materials have been used in the construction of buildings over the years. Many naturally occurring materials and man-made building materials have been found to be hazardous or to have adverse environmental impact. These include but are not limited to asbestos, formaldehyde, lead paint, electromagnetic radiation, and radon. Buried fuel tanks may pose an environmental hazard. Hazardous materials, product liability, and environmental hazards are not included in the scope of our inspection. For information on hazardous materials, call the Environmental Protection Agency in San Francisco at 415-744-1500.

WATER HEATER

- 221. Needs Catch Pan:** Water heaters eventually leak with age. A water heater near or above wood-framed flooring should have a sheet metal or plastic pan beneath with a drain to the exterior to prevent damage when leakage occurs.
- 222. Insufficient Garage Elevation:** The water heater is installed on the garage floor. We recommend the water heater be elevated above the garage floor to provide a minimum 18 inches clearance. The bottom 18 inches of a garage near the floor is considered a "hazardous zone." Any source of combustion, such as an open flame or electrical switch, is prohibited in this area as gasoline, paints, and other flammable materials are often stored in garages. The 18 inch rule allows fumes from a spilled fluid to dilute with air. Water heaters, furnaces, clothes dryers, or other such appliances should be installed on platforms of sufficient height to provide adequate clearance.
- 223. Vehicle Barrier Needed:** The water heater is not protected from vehicle damage. Water heaters or furnaces installed in garages should be protected from vehicle impact which could damage the attached fuel piping resulting in a fire or serious injury. We recommend an adequate barrier be installed to protect the garage gas piping from vehicle impact. The best protection is concrete-filled steel pipes set into the garage floor.
- 224. Water Heater Maintenance:** It is important to avoid storing combustible items near water heaters and other gas-fired appliances. The life of a water heater may be extended by periodically removing the sediment that builds up in the tank. Attach a garden hose to the drain valve at the bottom and open the valve until the water runs clear. Drain valves commonly drip, and can be repaired by installing a plastic cap. The temperature adjustment control should be kept in the middle range; the water temperature should never be set hot enough to scald someone accidentally. The life of a water heater may also be extended by replacement of the sacrificial anode. These are generally designed to last only five years, and replacement anodes can be obtained at plumbing supply stores.
- 225. Water Hookups Rigid:** This water heater has rigid water supply piping instead of the flexible connectors typically required in new installations. We recommend approved flexible water supply connectors be installed as a safety upgrade. Rigid water supply connections may break during earthquakes.
- 226. Bonding:** Most jurisdictions now require water and gas piping to be connected electrically using a copper bonding wire secured to clamps on the piping near the water heater. The purpose is to provide a safe path to ground for any stray electrical current.
- 227. Gas Connector Outdated:** Brass gas connectors, copper tubing, and aluminum tubing are no longer approved for use as they may be subject to damage or gas leakage. We recommend all outdated gas connectors be replaced when the equipment is next serviced. Proper gas connectors are relatively inexpensive.
- 228. Gas Connector Rigid:** Rigid piping is more likely to leak or break in an earthquake. We suggest upgrading with modern flexible gas connectors.

- 229. Insulating Blanket:** Insulating blankets can help conserve energy for water heaters in cold locations, such as garages or exterior closets. Blankets should not block the air openings to the burners or draft hood, and should be securely taped. Blankets are not as important with newer water heaters which have more built-in insulation. Some water heater manufacturers recommend that blankets not be installed on their new water heaters.
- 230. TPR Valve:** A Temperature and Pressure Relief (TPR) valve is a safety valve which releases excess pressure from the water heater in the event the regulator fails. It is an important safety device which can prevent a dangerous explosion. TPR valves are required for safety on all water heaters and boilers. The temperature sensor of the TPR valve should extend into the upper portion of the water heater tank. Hot water may occasionally drip or spray from the valve discharge pipe, triggered by changes in water pressure. Leaky valves may fail from encrusted mineral residue, and should be replaced. Most TPR valve manufacturers recommend the valve be tested once a year.
- 231. Pressure Valve:** A Pressure Relief Valve operates only under pressure. Modern water heaters typically require safety valves that respond to both temperature and pressure.
- 232. Has Watts 210:** This water heater is provided with a Watts 210 valve instead of a standard temperature and pressure relief (TPR) valve. A Watts 210 valve shuts off the gas to the heater when the water temperature exceeds 210 degrees Fahrenheit and does not need discharge piping.
- 233. TPR Discharge:** Temperature Pressure Relief valves should have discharge piping to carry hot water or steam safely to the exterior. (In some building jurisdictions, the discharge piping is permitted to end over a garage floor.) Rigid steel, copper, or approved CPVC piping should be used. Other plastic pipe, aluminum tubing, and flexible tubing are not approved. The end of the pipe should point downward and must not be threaded (so that it cannot be capped). The piping must be at least the same diameter as the outlet of the TPR valve (typically ¾ inch), and should drain by gravity. If the drain runs upward, the pipe can fill with water causing a malfunction.
- 234. Seismic Restraints:** Adequate water heater strapping or bracing can significantly reduce damage which can occur from water heater movement. The best braces are rigid and support the water heater both at the top and bottom. A single piece of plumbers tape is no longer considered an adequate restraint according to the guidelines of the California Seismic Safety Commission. As of January 1, 1996, home sellers in California are required to certify that their water heater complies with current guidelines upon transfer of the property.
- 235. Improper/Outdated Vent Material:** Various materials have been used to vent gas-fired appliances. The earliest were brick or masonry chimneys built on-site. They were followed by tile-lined sheet metal flues (patent flues) and cement asbestos flues (transite). These materials heat up slowly and the low temperature may restrict the upward flow of flue gases. For this reason most manufacturers specify modern galvanized sheet metal vents which terminate above the roof line. Older vent pipes are not recommended with new equipment and may result in corrosion or malfunction. Aluminum and blue or black metal "stove pipe" vent piping are not suitable for modern appliances as they are easily damaged by chemicals in the flue gases. We recommend upgrading to galvanized steel type-B double wall vent piping.
- 236. Duct Tape:** Duct tape is not rated for the high temperatures of vent piping, and can melt or become brittle and loose. Foil tapes rated for high temperatures are approved for vent piping.
- 237. Spillage:** Back venting, also known as "spillage," occurs when normal venting is obstructed by improper configuration, improper vent piping materials, vent blockage, or insufficient combustion air. The flue gases, which contain hazardous byproducts of combustion, can spill from the draft diverter, or draft hood, at water and space heating systems. Spillage may also cause incomplete combustion. This condition is potentially hazardous and should be corrected immediately.
- 238. Remove Foam Insulation:** Plastic foam insulation on water piping will melt if too close to the hot draft diverter or vent piping above the water heater. This insulation should be trimmed or removed to provide adequate clearance.
- 239. Inadequate Clearance:** Single wall metal vent pipes can get very hot and should have at least 6 inches clearance from combustibles. Double wall metal vent pipes (type B) can be installed as close as 1 inch from a combustible surface.
- 240. Insufficient Rise:** Vent connector piping should be installed with at least ¼ inches per foot of upward slope for fumes to vent properly, with no downhill dips in the vent connector. Poor rise can cause flue gas spillage (see #237) and corrosion in the vent piping.

- 241. Improper Horiz-to-Vert Ratio:** The vertical length of a vent or flue should be at least 1/3 longer than the horizontal portion. An excessively long horizontal run can cause poor venting of flue gases and spillage (see #237).
- 242. Improper Termination:** The end, or termination, of a water or space heating system vent should be at least 4 feet below, or 4 feet horizontally from, and at least 1 foot above a doorway or openable window. The cap on the top of a vent pipe should be a material that is listed for this use. Older vent caps often rust and may need replacement. Vents should have adequate clearance from roofing materials. Direct-vent appliances rated less than 50,000 BTUs with vent terminations through a wall may be located as close as 9 inches from a building opening.
- 243. Draft Diverter Improper:** Water heaters are supplied with a draft diverter between the water heater and vent piping to prevent downdraft into the water heater and to allow intake of dilution air to the flue gases. Only a single draft diverter should be used, and it must be the one manufactured for the water heater. Double draft diverters are prone to spillage (see #237). The draft diverter should fit securely over the center of the flue opening on top of the water heater.
- 244. Inadequate Combustion Air:** Inadequate air supply can cause incomplete combustion in a furnace or water heater, and may produce hazardous byproducts of combustion, such as carbon monoxide. A furnace or water heater compartment should have two air openings leading to the outside, one near the floor and the other near the compartment ceiling. Combustion air openings should be screened, except for those terminating in an attic. Screening may require periodic cleaning to prevent blockage from dust buildup. Openings should not be blocked by personal property.

PLUMBING

- 245. Well:** A qualified well specialist should be retained to check the well equipment and flow rate. Water quality can be tested at laboratories approved by the local health department.
- 246. Main Valve Not Found:** We were not able to locate a readily accessible main shutoff valve for the water supply system. We recommend that it be located or that one be installed in a readily accessible place so the water can be shut off easily in an emergency.
- 247. Water Pressure Excessive:** Normal water pressure is between 30 and 80 pounds. Higher pressure can damage pipe fittings, valves, appliances and fixtures. A regulator is required in new construction to reduce pressures over 80 pounds. If the piping is old and restricted, the addition of a regulator may noticeably reduce the available water flow when fixtures are used simultaneously.
- 248. Has Regulator:** Water pressure regulators are typically installed when the incoming pressure exceeds 80 pounds. The regulator has an adjustment screw to raise or lower the water pressure. Regulators should be on the house side from the main shutoff valve. Modern regulators should have a sand screen to prevent the regulator from becoming clogged. Such screens require routine cleaning to prevent a reduction in available water flow.
- 249. Supply Piping Galvanized:** Galvanized steel piping, common in older homes, is prone to rusting and the buildup of minerals which restrict water flow. Water hardness and pipe quality are major factors affecting the useful life of the piping. The need for eventual replacement of galvanized piping should be anticipated.
- 250. Polybutylene Supply:** Polybutylene piping was used for a short time as interior supply piping. It is prone to leakage at fittings, and there was a well-publicized settlement between a pipe manufacturer and consumers. Polybutylene piping with defective fittings is prone to rupture or leakage at any time, and complete replacement may be necessary.
- 251. Cross Connections:** A cross connection is an improper plumbing configuration which could allow waste water to enter the supply piping. Cross connections should be eliminated by a qualified plumber.
- 252. Unbonded Dielectrics:** Dielectric fittings have plastic or rubber washers to prevent direct contact between copper and galvanized supply piping which can cause the galvanized steel piping to rust. Water supply piping is often used to provide electric grounding for appliances and the plastic washer in the union breaks the continuous connection necessary for an effective connection. Copper jumper wires should be secured to clamps placed on both sides of the fittings to provide grounding or bonding of the system. The copper jumper wire may still contribute to galvanized pipe corrosion, but is advised for greater electrical safety. The only way to completely eliminate the corrosion potential is to eliminate the galvanized piping.

- 253. Hammer/Noise:** Pipes which are not properly secured or supported may vibrate with water flow, creating a rattling sound. Water hammer is caused by the absence of adequate air cushions in the piping. A hammering sound typically occurs when shutting off water at a valve, which causes the water to stop suddenly as it pounds against the piping. Additional pipe supports may prevent movement and vibration. The installation of air cushion devices in the water supply piping can also reduce water hammer.
- 254. Direct Copper-Galv Connections:** A direct connection between copper and steel piping can cause rusting or corrosion in the galvanized steel piping. The standard procedure is to install a brass pipe, brass fitting, or dielectric union to separate copper from galvanized steel.
- 255. Angle Stops:** The shutoff valves at the supply piping to individual fixtures (such as below a sink) are not often operated, and may "freeze" in place or leak when operated. They are not tested in a home inspection.
- 256. Backflow Preventers:** In new construction, backflow preventers are screwed onto each exterior hose bib (faucet) to prevent lawn fertilizer or other undesirable substances from being drawn up a garden hose and into the house water supply system should there be a drop in water pressure causing a reversal in water flow.
- 257. Exposed PVC:** Plastic piping breaks down from exposure to sunlight, and should be wrapped or painted for protection.
- 258. Needs Anti-Siphon Valves:** Anti-siphon valves are designed to prevent outside water from being drawn into the sprinkler heads and into the house water supply system. They are necessary to prevent an accidental cross connection which could contaminate house drinking water.
- 259. Water Flow at Fixtures:** The interior of older galvanized piping is often restricted by rust or mineral deposits. This restriction reduces the water volume provided to the house fixtures. To repair major flow restriction, it may be necessary to replace all or part of the galvanized piping. It may be sufficient to replace the horizontal hot water piping before going to the extra expense of opening up interior walls to replace the vertical piping within them. It is advisable to install new piping whenever old piping is exposed, such as when new shower walls are installed.
- 260. Water Softener:** The functionality of water treatment systems is not typically included in a home inspection. We suggest testing the water quality to determine if treatment is advisable.
- 261. Improper Softener Drain:** Permanently installed water softeners have a brine drain which will typically function automatically during the operating cycle of the water softener. The drain tubing should discharge into a plumbing fixture with a proper air break. These are often tapped directly into drain piping or installed in other ways which create a cross-connection and allow potential contamination of the supply water.

DRAINS AND VENTS

- 262. Cross Connection:** Plumbing fixtures should be designed to prevent a direct connection between the water supply and waste piping to prevent contamination. This is usually achieved by providing a gap between the sink faucet opening and the sink below.
- 263. Missing/Substandard Drain Piping Supports:** Drain piping should be securely supported from the structure, and not simply set on blocks on the soil. Plastic drain pipes require support every four feet. When metal strapping is used to support plastic piping, the piping should be insulated from the strapping to protect it from abrasion and damage.
- 264. Open Waste Pipe:** The waste pipe system should be air tight to prevent sewage leaks and also the escape of sewer gas into the building.
- 265. Insufficient Fall:** Horizontal waste piping should be installed with a uniform slope of at least 1/4 inch per foot downward towards the drain outlet to allow for an adequate discharge of both solid and liquid wastes. This slope can be reduced to 1/8 inch per foot in some installations when approved by the local jurisdiction.
- 266. Trap Improper/Missing:** A trap is a U-shaped drainline required on all plumbing fixtures (except toilets). The trap holds water to block sewer gas, which otherwise could flow up from the main sewer piping into the building. Sewer gas (methane) may have an odor or it may be odorless, and it can be explosive. If a trap is not properly arranged the water can be siphoned out, allowing sewer gas into the building. The horizontal pipe or "arm" should flow downward at a gentle slope (1/4 inch per foot) to the vertical drain-vent connection.

- 267. Exposed Exterior ABS Piping:** ABS plastic waste piping is designed for interior use only and should not be used at the exterior of a building where it is exposed to physical damage or to damage from the sun.
- 268. Vent Missing/Improper:** Plumbing vents allow sewer gases to escape and air to enter the waste piping system. Air is necessary to allow water to flow freely through the pipes. Improper venting can cause siphonage which draws the water out of fixture traps. Vent piping should be installed near every fixture. The vent pipes should terminate at least 6 inches above the roof surface and away from any openable windows or other building openings.
- 269. Plastic Pipes Supporting Metal Pipes:** Plastic piping may not be strong enough to support heavier metal piping such as cast iron or steel, and may crack or leak. The proper method is to place plastic piping above, not below, metal waste piping.
- 270. Old Sewer Piping:** Clay tile piping was used in many older waste systems between the building and main sewer. These pipes are buried in the ground and are not accessible to inspection. Clay pipes are easily damaged and can be blocked by tree roots, or may crack from soil movement, causing sewage to back up into house plumbing fixtures. Older cast iron or steel waste piping is susceptible to rusting and may also need replacement. If possible, determine if there is any history of clogged drains or waste system repairs. Eventual replacement of old buried waste piping should be anticipated. We advise having old sewer laterals examined for defects by a qualified plumber using special video equipment designed for this purpose.
- 271. Cleanout Added:** Repairs or modifications to the waste or sewer piping system may indicate previous blockage in the buried piping. We advise obtaining information on the extent of recent repairs and a history of any previous leaks or blockages.
- 272. Septic Not Inspected:** A qualified septic specialist should be retained to locate and examine the septic tank, leach lines, and any control valves that may be present in the system. The septic system capacity should be determined or estimated if possible. Tanks typically require cleaning about every five years.
- 273. Defective ABS Piping:** There has been a history of failure in some batches of certain brands of ABS plastic piping manufactured in 1985 and 1986. These brands include: Centaur, Gable, Polaris, Apache, and Phoenix. We recommend ABS piping of these brands and years be monitored periodically for leaks. Additional information can be found on the internet at www.abspipes.com.
- 274. Flow at Drains:** Plumbing fixtures should drain in a reasonable amount of time, without overflow when another fixture is drained simultaneously.
- 275. Gas Piping Not Protected from Vehicles:** Gas meters and piping in driveways or garages should be protected from vehicles by permanent barriers. Concrete-filled steel poles are often used for this purpose.
- 276. Uncapped Fitting:** Gas valves which are not in use should be capped off to prevent the escape of gas into a room should the valve be operated.
- 277. Improper Union Location:** Unions are a type of coupling which join threaded piping by pressing metal surfaces against each other. They are approved for gas piping only when adjacent to a meter or appliance, and should not be used in other areas, particularly crawlspaces, as they are prone to leakage. Where unions would otherwise be necessary, couplings with left-hand threads can be used.
- 278. Underground below Building:** Gas piping should not be installed so that it runs underground or below a concrete slab when the piping is in or below a building.
- 279. Unprotected in or near Ground:** Metal gas piping within soil should be wrapped or coated for protection against corrosion. Unprotected piping should be at least six inches from the ground. Gas piping within a slab should have a protective sleeve.

CENTRAL HEATING EQUIPMENT

- 280. No Disconnect Switch:** Gas-fired furnaces should have a switch to shut off power to the unit so it can be serviced safely.
- 281. Gas Connector Outdated/Rigid:** See #s 227 and 228.
- 282. Heat Exchanger:** Fossil-fuel fired furnaces have metal chambers to enclose the flame and transmit heat to the circulating air. With age and use, cracks or rust holes may develop in heat exchangers. Fumes from the flame then have the potential to enter the air flowing to the living area. Heat exchangers should be carefully examined as part of routine servicing. Only a small portion of the heat exchanger is accessible during a typical home inspection.
- 283. Recommend System Servicing and Evaluation:** See #217.
- 284. Do Not Store:** See #218.

VENTING

- 285. Combustion Air Inadequate:** See #244.
- 286. Poor Separation:** A ten foot separation is typically required between combustion and return air openings to keep vent fumes from being drawn into the circulating air system by the furnace blower. Insufficient separation is a potentially hazardous condition which can deprive a gas appliance of sufficient combustion air.
- 287. Improper/Outdated Vent Material:** See #235.
- 288. Duct Tape:** See #236.
- 289. Spillage:** See #237.
- 290. Inadequate Clearance:** See #239.
- 291. Insufficient Rise:** See #240.
- 292. Improper Horiz-to-Vert Ratio:** See #241.
- 293. Improper Termination:** See #242.
- 294. Inducer Deposits:** Many newer furnaces have supplemental inducer fans on the vent (flue) to control the flow of air through the burners and improve the efficiency of the furnace. Mineral deposits may form within the inducer as a result of condensation within the vent piping. This can indicate improper venting. It may be possible to improve venting effectiveness by modifying the piping material or configuration. We recommend inducers be checked annually by a qualified heating contractor.
- 295. Vent Exposed in Closet:** Gas appliance vent piping can get hot and should not be left exposed in clothes closets or other areas where they can come in contact with combustible materials. Improperly exposed vent piping should be either relocated or properly enclosed.

DISTRIBUTION

- 296. Ducting Separations/Gaps:** Separations or gaps in the ducting system can allow heated or conditioned air to escape, significantly reducing efficiency.
- 297. Air Filters:** Air filters prevent the accumulation of dust and dirt on the blower fan blades which can significantly reduce efficiency. Air filters should be checked monthly and changed or cleaned, depending on type, as necessary. A clogged air filter can lead to reduced air flow over a furnace heat exchanger, resulting in premature heat exchanger cracking or failure. Some furnace manufacturers prefer that filters not be used on their equipment as poor filter maintenance is common. Filters are required in air conditioning systems to prevent dust or dirt accumulation on the evaporator coils.
- 298. Filter Cover Missing:** In some furnaces the filter slides into an opening in the air return duct. Once the filter is in place, the opening in the duct should be sealed with a sheet metal cover. Any openings in the ducting near the furnace can allow the entry of unheated air into the ducting and reduce furnace efficiency. Openings can also lower air pressure near the furnace causing spillage of flue gases which could then be drawn into the ducting, creating a hazardous condition. Any duct openings should be properly sealed or covered.
- 299. Gaps at Floor:** The bottom of a furnace blower compartment should be air tight. Openings will allow unconditioned air to enter the ducting, reducing system efficiency. The air flow can also interfere with proper combustion or venting creating a hazardous condition. We recommend a metal cover be installed on the floor of the blower compartment or that this area be otherwise sealed to prevent air leakage.
- 300. Loose Blower Door:** The blower compartment door should be securely in position to prevent the intake of air from the burners and vent system. If air from these areas is drawn into the blower, there is a potential for improper combustion and for carbon monoxide to enter the air flow to the building. It may be necessary to fasten the door by taping or other means to assure that it stays tightly sealed.
- 301. Have Encased Hot Water Piping Pressure-Tested:** Slab-encased radiant heat piping should be periodically pressure tested by a qualified contractor to determine if there is any leakage. There is always a potential for undetected leakage in this piping as it is inaccessible.
- 302. Heating Adequacy in Habitable Rooms:** See #213.

CENTRAL AIR CONDITIONING

- 303. Split System:** Air conditioning systems which have an indoor coil adjacent to an air handler and an outdoor coil with a compressor are referred to as split systems (because the components are split between the interior and exterior). These are often a part of a forced-air heating system.
- 304. Package Unit:** Air conditioning systems in which both evaporating and condensing coils are located at the exterior in a single "package" or sheet metal box, which also typically includes a gas fired furnace. These units are often placed on the roof and are common in commercial installations.
- 305. Below 65° Not Operated:** Inspectors as a rule do not operate air conditioning systems below 65° to prevent damage to the equipment. Specialty contractors with special equipment sometimes may operate AC equipment below this temperature during normal servicing.
- 306. Disconnect Not in Sight of Condenser:** The exterior air conditioning condenser should be provided with an electrical disconnect switch within the line of sight from the condenser to provide for safe repair and periodic maintenance.

- 307. Condensate Drain Piping:** A substantial amount of water may flow from the air conditioning evaporator coils which are typically located near the furnace. The discharge piping for this condensate should be sloped and supported in the same manner as any other drain piping. Many modern air conditioning units have a second condensate drain opening which requires a second drain line, especially when installed over wood framing. Condensate drain piping should discharge to a plumbing fixture or a location approved by the local building jurisdiction. Many jurisdictions require a rock-filled pit for the condensation to seep into. The drain should be checked periodically to be sure that water flows from it when the air conditioning system is in operation. The absence of water at the condensate drain, commonly caused by clogged or improper piping, may allow water to spill inside the evaporator and damage the equipment.
- 308. Catch Pan Needed:** When an evaporative coil of an air conditioner is installed over a space where water leakage could cause damage to the building (such as an attic installation), a catch pan should be installed beneath it. The catch pan should have a drain pipe to a visible location.
- 309. Temperature Split:** Air coming from the cold air registers which is either too warm or too cold indicates a malfunctioning system. Air condition systems are specifically designed to provide a difference of 14 to 21 degrees between the air return and air supply registers.

Attic

- 310. Trusses Cut:** Engineer-designed manufactured roof trusses typically have no redundant members, and should not be modified without engineering approval. Cut trusses should be reviewed by a qualified engineer.
- 311. Undersized Framing:** The framing in older attics is often undersized by modern standards. Structural members such as rafters, purlins, collar ties, or ridge boards may be too small or missing. Multiple roof layers can be very heavy causing the rafters to sag. The framing should be examined and reinforced or repaired as needed by a qualified contractor before a new roof surface is installed.
- 312. Ventilation Inadequate:** Adequate attic ventilation is important to prevent the accumulation of moisture which can cause decay and damage, and to prevent excessive attic temperatures. Improved ventilation can reduce attic and interior room temperatures.
- 313. Vent Screens:** Attic vent openings should be screened to prevent animal entry. Screening with a ¼ inch mesh should be used as it does not become clogged as easily as finer screening. Insulation should be held clear of vents with cardboard or metal barriers where needed.
- 314. Fan Terminates in Attic:** Bathroom and other exhaust vents should be extended to the building exterior. Allowing them to terminate in the attic can allow excessive moisture accumulation.
- 315. Insulation:** We recommend upgrading the insulation where needed to modern energy standards to reduce heat accumulation in the summer and to prevent heat loss in winter. The standard for new construction is 8-10 inch insulation to achieve a value of R-30. The attic wiring should be checked by an electrician before insulation is added.
- 316. K&T Wiring Present :** Special procedures should be followed prior to insulating an attic when knob and tube wiring is present. The wiring should be inspected by a qualified electrician and a warning notice should be posted stating that live wiring is present beneath the insulation.
- 317. Cellulose on K&T Wiring:** Knob and tube wiring, common in older houses, should ideally be installed in open air. Covering the wiring with insulation can lead to overheating and, in some cases, creates a potential fire hazard. One method to reduce the risk of overheating in these wires is to be sure that only 15-amp fuses or breakers are used on these circuits. An electrician should be retained to examine attic wiring before covering it with insulation.
- 318. Insulation over Lights:** Insulation should be kept clear of ceiling mounted light fixtures to prevent heat build-up which can be a fire hazard, unless the fixtures are clearly marked with a special IC or "insulation compatible" rating.
- 319. Vapor Barriers:** Vapor retarders or moisture barriers are installed at wall, ceiling, and floor surfaces to prevent moisture movement from conditioned areas (rooms) into the insulated framing areas. Vapor barriers are especially important in cold winter climates because the temperature differential can cause condensation to form. Vapor retarders are not typically installed in uninsulated floor framing or when attic insulation is added in moderate climates.

320. Inverted Barriers: The proper method is to place the foil or paper facing so it is adjacent to the conditioned surface, typically down and against the ceiling in an attic. An inverted vapor barrier can allow moisture to collect in the insulation and may lead to framing damage. One method to prevent moisture accumulation is to cut slits in the paper or foil backing. In moderate climates, vapor barriers typically have little effect, and correction of an inverted vapor barrier is usually not necessary.

321. Touches Knob & Tube Wiring: Paper or aluminum foil facing on attic insulation should not be in direct contact with older knob and tube wiring, and poses a fire hazard. Any direct contact of the wiring and facing should be eliminated.

GARAGE

322. Protective Barrier Needed: Gas meters and piping, water heaters, furnaces, or other appliances permanently installed in garages need protection from vehicle impact which could damage the fuel piping or appliances. A wheel curb offers some protection. The best protection is concrete-filled steel pipes set into the garage floor.

323. Remove Firewood: Firewood should be stored well away from the building for fire safety and to prevent infestation by termites or other wood-destroying insects, which are often present in firewood.

324. Not 18 Inches from Floor: The bottom 18 inches of a garage near the floor is considered a "hazardous zone." Any source of combustion, such as an open flame or electrical switch, is prohibited in this area as gasoline, paints, and other flammable materials are often stored in garages. The 18 inch rule allows fumes from a spilled fluid to dilute with air. Water heaters, furnaces, clothes dryers, or other such appliances should be installed on platforms of sufficient height to provide adequate clearance.

325. Non-Safety Springs: Modern garage door springs are provided with safety retainers to keep the springs from flying loose and causing damage or injury if they break. We recommend older springs without retainers be replaced with the new safety type or properly secured cables be installed to retain older springs.

326. No Auto Reverse: Automatic garage doors should be provided with an automatic return mechanism which reverses the door automatically when its downward path is obstructed. Many older openers are not provided with this safety feature. Modern openers have photo-electric sensors for added automatic-reversal protection, and these sensors can be installed on older openers to upgrade them to modern safety standards.

327. Room over Garage Extension: A room extending over a garage may experience structural failure in an earthquake, particularly if the opening of the garage doors does not line up with other walls of the building. This situation is commonly referred to as a "soft story." A qualified engineer should be consulted about reinforcing this area.

328. Faulty Grade: See #44.

329. Wood-Soil Contact: See #20.

330. Fire Separation Walls: The surfaces between the garage and house should be covered with 5/8 inch thick fire-rated gypsum drywall or equivalent. The joints between sections of drywall should be taped unless the joints are over framing. Any holes or openings in fire walls should be repaired. Plastic piping should not be installed through a fire wall as it can melt from high heat and allow fire entry. Fire-rated surfaces might not be present between the house and garage in older construction. Garages that are attached to residences and do not have adequate fire wall protection should not be used for storing flammable liquids or vehicles. Fires often start in garages due to the storage of flammable liquids such as paint, solvents, or gasoline.

331. Fire Doors: There should be a fire-rated, solid core, self-closing door installed on any passageway between the garage and the house, attic, or subarea crawlspaces. We recommend upgrading for greater fire safety. Such doors should not have windows or pet doors. Sheet metal on the garage side of a door will provide some fire protection but should not be considered adequate by modern standards.

INTERIOR

- 332. Common Cracks:** Wall and ceiling surface cracking is common, especially in older buildings. Periodic repair may be needed as part of routine property maintenance.
- 333. Low Ceilings:** Rooms with ceilings that are less than 7 feet 6 inches high may not be considered "habitable" by local building departments. These rooms should not be counted as bedrooms in a property description. There are exceptions to the general rule which allows for sloping ceilings and low beams. The local building department should be consulted to determine their requirements as to proper room use.
- 334. Stains:** To determine the presence of active leakage, it may be necessary to observe these areas after heavy rains or to water test using a garden hose. We can water test specific areas for an additional fee upon request.
- 335. Cathedral Ceiling Unvented:** Enclosed ceilings may need ventilation to prevent moisture accumulation which can lead to decay in the framing. Most experts now recommend adding vents along the upper and lower roof edges to allow any moisture to escape.
- 336. Floor Slope Not Measured:** We do not perform a detailed survey of the floors for slope or uniform elevation as part of our standard inspection. We can return with special equipment and provide a floor level survey to determine the extent of floor slope for an additional fee upon request.
- 337. Uneven Steps:** Individual steps in staircases should have a consistent height and depth for safe use. The difference between one step and any other step in the same staircase should not be more than 3/8 inch. Uneven steps are a potential trip hazard and should be corrected.
- 338. Stair Compartment Not Fire Rated:** The walls and ceilings of enclosed storage areas beneath stairways are typically covered with fire-rated materials in new construction. Openings which have been created in fire-rated surfaces should be repaired. Special care should be made to avoid storing flammable materials in compartments without fire-rated surfaces.
- 339. Stair Railings:** Modern building standards call for railings at least 36 inches high for any deck, stair, or landing more than 30 inches above an adjacent surface, and for openings in the rail to be less than 4 inches in diameter. Large railing openings which may allow a child to fall through should be modified for safety. This standard was recently changed from 6 inches to 4 inches as it was found that small children can slip through a 6 inch opening. Staircases with four or more steps should have handrails that are between 1 1/2 and 2 inches wide. Handrails should be placed and shaped so they can be readily grasped for safety. Handrails should be 34 to 38 inches above the leading edge of the stairway treads. Handrails should return to the railing or post or to the ground. Handrails should not end in a projection which could be hooked by clothing.
- 340. Smoke Detectors:** We strongly urge all property residents to test smoke alarms by pressing the test button as soon they move into a new property and again each month. Most batteries should be changed every six months. This is easy to remember if you change batteries at the same time you adjust your clocks for daylight savings time semi-annually. Smoke detectors should be installed on every floor and in hallways near sleeping areas. Most jurisdictions now require smoke detectors also be installed in each bedroom in new construction or when modifications exceeding \$1000 in value are made. Direct wired smoke detectors should also have backup batteries so they will function in a power outage. Fire extinguishers should be provided in kitchens and garages for emergency use. We also suggest CO or carbon monoxide detectors be installed in buildings with gas-fired heating systems.

WINDOWS

- 341. Dual Glazing:** Failure in the seal at the perimeter of dual glazed window assemblies allows moisture to enter and condense between the panes of glass. This is typically a manufacturing defect and may only be repairable by window replacement.
- 342. Egress:** Basements and sleeping rooms below the fourth story need one escape or rescue window for emergency egress. Most building codes require this to be at least 5.7 square feet in size, at least 24 inches high, at least 20 inches wide, and with a sill not more than 44 inches from the floor.
- 343. Unopenable Security Bars:** Windows may be the only available escape in a fire. Security bars over escape windows should have release mechanisms to open the bars from the inside without the use of a key or special tool. This is especially important in bedroom windows.
- 344. Untempered Glass:** The general rule for new construction is to require safety glass when less than 18 inches from the floor (and larger than nine square feet), when adjacent to a door, or when in a door (unless smaller than three inches in diameter). While there is no requirement to change existing glass, safety glass is required for replacement in such areas. Special care should be taken in these areas until safety glass is installed. Furniture can often be arranged to direct traffic away from non-safety glass windows. Applying decals to sliding glass doors and large windows can help prevent accidents caused by persons who may think they are walking through an open door. Special plastic films are available which can be applied to the glass to reduce the likelihood of injury should the glass break.

DOORS

- 345. Opens over Step(s):** Doors should have a landing at least as long as the width of the door. A door swinging over a step is a potential safety hazard, especially to persons unfamiliar with the door. Many garage and basement stairs have been constructed in this manner before this practice was prohibited. It is sometimes possible to reverse the direction of the door swing or to install a landing and steps to replace existing steps.
- 346. Inside Key Locks:** Deadbolts and other locks with removable inside keys can prevent escape in a fire emergency and are prohibited in many jurisdictions. Always leave inside keys in the locks when the building is occupied. Thumb latches are safer and lock replacement should be considered.
- 347. Unsquare Frames:** Out of square door frames can be caused by foundation settling or movement.
- 348. Slider Difficult:** Sliding doors typically roll on small wheels which can wear over time. It may be possible to replace them. Doors which bind may indicate damaged frames or tracks, or distortion of other building components.
- 349. Appliance Vent Exposed in Closet:** Gas appliance vent piping can get hot and should not be left exposed in clothes closets or other areas where they can come in contact with combustible materials. Improperly exposed vent piping should be either relocated or properly enclosed.

FIREPLACE

- 350. Soft/Missing Mortar:** A common repair method for deteriorated mortar is to repoint the brickwork, where soft mortar is removed and replaced with fire clay mortar. Small mortar cracks can be patched with silicate cement formulated especially for fireplace repairs. A qualified contractor should be retained to determine the appropriate repair method.
- 351. Spalling:** Over time, masonry may deteriorate from the effects of moisture and heat, causing the surfaces to crumble. Masonry with significant spalling should be replaced.
- 352. Throat Needs Parging:** The "throat" is the area above the firebox. Exposed brickwork, gaps, or damaged plaster in this area can trap soot or combustible creosote, creating a potential fire hazard. The surfaces above most modern masonry fireboxes are covered with special fire-rated plaster called "parging." In many fireplaces the throat is obstructed and is not accessible to inspection. We recommend all old fireboxes and flues be examined carefully by a qualified chimney repair contractor.
- 353. Fireplace May Smoke:** Stains on the fireplace facing may indicate poor draft at the flue due to faulty design or an obstruction, or may have been caused by improper fire building methods. It may be necessary to have the chimney checked by a specialist to determine if it draws properly. Glass doors may improve the draw up the chimney.
- 354. Damper:** The purpose of a damper is to block the flow of warm room air up the chimney when the fireplace is not in use. An open flue is comparable to an open window and will substantially reduce heating system efficiency. Dampers should be kept closed when fireplaces are not in use. Glass doors can also be used to serve the same function.
- 355. Gas Lighter:** Gas lighters should have removable keys which are stored out of the reach of children. The gas valve should not be located inside the fire box except for decorative fireplaces that burn gas and not firewood.
- 356. Block Damper Open:** Dampers in fireplaces with gas devices should be kept open. Gas could enter the living space if the valve leaks or is turned on accidentally. Some jurisdictions now require that new dampers have clips to keep them from closing fully when a gas device is present. The safest procedure may be to block the damper open permanently and to install glass doors on the fireplace opening to prevent heat loss when the fireplace is not in use.
- 357. Flex Connector in Firebox:** Flexible gas connectors may be easily damaged by impact or high heat in a fireplace, and should not be used with gas lighters except in decorative fireplaces that have gas fires only.
- 358. Hearth Supported by Wood:** Older hearth extensions (the portion of the hearth which extends into the room) were commonly supported by wood framing which is visible in the subarea. This practice was discontinued in the 1950s. The wood framing may ignite if hot coals or ashes are allowed to spill onto the hearth extension or if these wood supports extend to the area under the fire pit. Removal of the wood support could cause the hearth extension to crack or fall. A qualified fireplace contractor should be contacted to determine how best to support the hearth extension. The support for fireplace hearths above the first floor may not be visually accessible and should be examined by a fireplace specialist.
- 359. Insert/Stove:** An insert is a wood burning stove installed inside a fireplace. A common problem with this installation is the absence of a sheet metal liner inside the masonry flue. The colder masonry flue may cause an accumulation of soot or creosote at the insert connection, creating a potential fire risk. The proper procedure is to run a sheet metal flue pipe completely through the fireplace and chimney, terminating above the roof. To do this, it is usually necessary to remove the damper and portions of the brickwork in the fire box. If the insert is removed, it may be necessary to rebuild the fire box and install a new damper before the fireplace can be safely used. Inserts should be checked annually by a qualified chimney sweep or fireplace contractor.
- 360. Inadequate Clearance:** Fireplaces, stoves, and chimneys require adequate clearance from combustible surfaces for fire safety. The required clearances vary and the manufacturer's specifications or the local building department should be consulted for their requirements. The normal minimum clearance between the front of a fireplace and combustible flooring is 16 inches. Inserts which rest on the hearth extension of the fireplace may require an additional hearth extension.

FIREPLACE

- 350. Soft/Missing Mortar:** A common repair method for deteriorated mortar is to repoint the brickwork, where soft mortar is removed and replaced with fire clay mortar. Small mortar cracks can be patched with silicate cement formulated especially for fireplace repairs. A qualified contractor should be retained to determine the appropriate repair method.
- 351. Spalling:** Over time, masonry may deteriorate from the effects of moisture and heat, causing the surfaces to crumble. Masonry with significant spalling should be replaced.
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- 353. Fireplace May Smoke:** Stains on the fireplace facing may indicate poor draft at the flue due to faulty design or an obstruction, or may have been caused by improper fire building methods. It may be necessary to have the chimney checked by a specialist to determine if it draws properly. Glass doors may improve the draw up the chimney.
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- 360. Inadequate Clearance:** Fireplaces, stoves, and chimneys require adequate clearance from combustible surfaces for fire safety. The required clearances vary and the manufacturer's specifications or the local building department should be consulted for their requirements. The normal minimum clearance between the front of a fireplace and combustible flooring is 16 inches. Inserts which rest on the hearth extension of the fireplace may require an additional hearth extension.

CHIMNEY

- 361. Masonry Chimney:** Modern brick or concrete block chimneys are lined with clay tile or concrete sections mortared together. The purpose of the liner is to contain a potential chimney fire. Liners and the mortar which join them together may deteriorate with age and use, reducing their effectiveness. Flue liners are not typically accessible to visual examination. Tall chimneys which extend above the roof line may need to be braced to prevent movement which can break the mortar, bricks, or liner. We recommend all older chimneys be carefully checked by a qualified chimney contractor before building a fire (or before the close of escrow). Any flue which is inaccessible may contain a defective flue liner or may even be unlined (see #364).
- 362. May Need Bracing:** Chimneys which extend well above the roof surface may need bracing to prevent damage or failure in an earthquake. The installation of steel bracing can reduce the potential for property damage or injury. Such bracing should be designed to prevent movement in all directions and conform with local ordinances. Modern chimneys are typically tied to the ceiling framing. These connections are usually not visually accessible.
- 363. Concrete/Pumice Liner:** Flue liners manufactured of concrete or pumice are more porous than traditional terra-cotta flue liners, and may absorb creosote. These flues must be cleaned more frequently than a terra-cotta flue. Over time, this material can absorb enough creosote to become unsafe. Care should be taken to avoid burning soft woods which burn dirty, and to avoid excessively hot fires. Porous flue liners are no longer approved in new construction.
- 364. Flue Unlined:** Unlined flues may not be safe to use and should be checked by a qualified contractor. Some jurisdictions allow the installation of a sheet metal or concrete liner inside existing unlined flues and others may require chimney replacement. An unlined flue indicates the chimney was constructed without reinforcement, and the risk of damage during earthquakes is greater than with modern reinforced chimneys.
- 365. Flue Liner Damaged:** An excessively worn or damaged flue liner could be hazardous if a chimney fire were to occur. The ceramic tile sections that line masonry chimneys are mostly inaccessible to normal visual inspection. Some fireplace contractors have special video equipment and are able to inspect flue interiors.
- 366. Short, May Smoke:** A chimney should terminate at least two feet above any building surface and within ten feet horizontally from the chimney. Proper height is necessary for fire safety and adequate draft. Smoke may enter the room at the fireplace if there are poor draft conditions. Smoking at the fireplace can sometimes be corrected by increasing the height of the chimney or by installing glass doors on the fireplace opening.
- 367. Mortar Deterioration:** The mortar between chimney bricks may become soft from age and moisture penetration. The standard repair method is to repoint the brickwork by scraping away old mortar and replacing it with new. Repointing is best performed by a qualified masonry contractor.
- 368. Mortar Cap Worn/Damaged/Missing:** Mortar is typically applied at the top of masonry chimneys to form a transition between the flue liner and the surrounding brickwork. The mortar cap is designed to shed rain water and prevent water entry into the brickwork at the top. Cracks often form in this mortar and should be caulked or patched with mortar. Loose or damaged mortar should be replaced.
- 369. Settlement:** Settling and differential movement between the chimney and the rest of the building is common in older buildings. Minor settling can cause cracks between the chimney and building exterior, allowing rain water entry. Substantial settling may open cracks between the fire box and chimney, creating a potential fire hazard. Chimneys which have settled should be checked annually by a qualified chimney contractor to determine if they are safe to use. Small or moderate settling cracks in the fire box or chimney interior may be relatively simple to repair. Larger cracks or substantial settlement may require chimney replacement or removal.
- 370. Rain Cap & Screen:** A proper rain cap and spark arrester screen should be provided for each fireplace flue to prevent water entry. Water entry can damage the fireplace or chimney masonry. A screen will prevent the escape of flaming embers, which can be a fire hazard. Manufactured rain cap spark arresters are available in building supply stores or can be installed by a qualified chimney sweep.
- 371. Screen Improper:** Sparks escaping from a chimney are a potential fire hazard. Spark arrester screening must be corrosion-resistant and should have a mesh between 3/8 and 1/2 inch, and the overall area of the screen should be at least four times that of the chimney opening. This means the screen must be an extension of the sides of the flue, not simply resting on top of it or being inserted within the flue.

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- 372. Has Shroud:** A decorative sheet metal cover over a prefabricated chimney top or shroud is installed to hide the termination provided by the fireplace manufacturer. There have been instances where fires have occurred due to overheating in these shrouds. The chimney top should be checked regularly for soot accumulation or indications of excessive heat. The fireplace manufacturer can be contacted to determine what type of cap or cover is safe for this particular fireplace and chimney.
- 373. Chimney Not Pushed:** We did not push against the chimney to test it for looseness as it was not safely accessible.
- 374. Chimney Pushed-OK:** We applied moderate pressure on the chimney and observed no looseness or movement.
- 375. Loose above Roof:** We observed looseness in the portion of the chimney which extends above the roof. Loose chimneys can pose a seismic or fire-safety hazard. We recommend the chimney be examined by a qualified contractor and braced, reinforced, or replaced as needed.

BATHROOM

- 376. Needs Grout/Caulking:** Bathroom fixtures and connections need periodic caulking to prevent water entry and damage, including bathtub and shower valves, the base of the toilet, floor-tub and floor-shower base connections, and other areas where moisture can enter and cause damage. These surfaces should be carefully cleaned and old, poor quality caulking removed if necessary before new high quality bathroom grade caulking is applied.
- 377. Low Window:** Shower windows should be installed so the sill is above the shower head. Lower windows require special care to prevent water entry and damage from the shower spray. Low windows should be periodically caulked and/or painted if necessary to prevent water entry and damage. Windows less than five feet above the shower pan or tub should be provided with tempered safety glass. One method to reduce water entry is to install a vinyl curtain over the window.
- 378. Noticeable Drop in Water Flow:** A reduction in water flow at the shower when other valves are operated at the same time may indicate low water volume from obstructions in older galvanized piping or may indicate a clogged shower head.
- 379. Apparently Untempered:** Tempered glass has been required in shower stalls and enclosures since the late 1960s. Older tempered glass was not always identified with a label etched in the corner of the glass. Tempered glass labels are often very faint or obscured by soap film. Many untempered shower doors were installed even after the requirements for tempered glass went into effect. Untempered shower doors, enclosures, and windows should be replaced with modern tempered glass for safety. Wire-reinforced glass is not a substitute for safety glass.
- 380. Flex Plastic Supplies:** We have observed that flexible plastic connectors or tubing, commonly used to connect sinks and toilets to the water supply piping, tend to swell with time and some eventually leak or actually burst, causing water damage. We advise upgrading these connections by installing metal sheathed "burst-proof" type flexible connectors.
- 381. Flexible Drain:** Corrugated drainage connectors are often installed by non-professionals to form drain traps or fixture tailpieces. These materials do not have smooth interior waterways and they collect sludge. They are not approved and should be replaced with conventional drainage fittings and materials.
- 382. Escutcheons:** Escutcheons are round doughnut shaped metal rings used to seal the connections between a shower heads or faucets and the wall surface. Escutcheons often loosen and need periodic adjustment and caulking.
- 383. Toilet Loose:** A loose toilet can cause water leakage and damage to the flooring. The seal at the base of the toilet also prevents entry of sewer gas (methane) into the living area. To reset a loose toilet, first disconnect the water supply, flush the toilet, and then remove the nuts from the bolts at the toilet base. Tilt the toilet and pour the water trapped in the toilet into a bucket, turn the toilet over and expose the wax seal at its base. Remove the old wax seal and install a new one. Before resetting the toilet, the flooring should be examined for damage and repaired if needed. Then, firmly reset the toilet on the bolts and tighten them carefully to avoid cracking the base. The toilet base and floor connection should be caulked with a bathroom grade sealant.
- 384. Insufficient Clearance:** Modern building standards require 2 feet of clearance in front of a toilet, and the center line of the toilet be at least 15 inches from the wall at each side (an alcove for a toilet must be at least 30 inches wide). Older bathrooms often do not have these clearances.

385. **Fill Valve Submerged:** The back valve (fill valve) within the toilet tank should be above the water level of the tank. This is required to prevent potential siphoning and cross connections. Many unapproved valves are available that are designed to be submerged. Such valves should be replaced. They are relatively inexpensive and simple to replace.
386. **GFCI:** See #204.
387. **Ungrounded 3-Hole:** See #203.
388. **Reverse Polarity:** See #199.
389. **Outlet on Fixture:** Bathroom light fixtures equipped with outlets are not permitted in new construction. We recommend any fixture outlets be disconnected and proper 3-hole GFCI-protected outlets be installed as necessary.
390. **Metal Light Fixture in Shower:** Metal light fixtures within a shower have the potential to be a shock hazard, and are required to be on a GFCI protected circuit. Most such fixtures in older construction are not adequately protected, and their replacement is advised.
391. **Electric Heater Outdated:** Outdated bathroom electric wall heaters may not meet modern safety standards. Many are not electrically grounded and many old heaters have exposed heating elements which can be a fire hazard. We suggest old outdated electric heaters be disconnected, replaced or removed. Heating is commonly provided for bathrooms in new construction, but it is not required by many building jurisdictions.

LAUNDRY

392. **Flexible Dryer Vent Piping:** Flexible clothes dryer vent piping should be used only between the dryer and the wall or floor connection. Only smooth-wall metal vent piping is approved for attic or crawlspace use. Flexible piping can collect lint that may obstruct air flow and cause overheating.
393. **Dryer Vent Flows Upward:** Dryer vent piping that rises vertically upward may be conducive to lint accumulation and clogging. This vent should be checked regularly as a clogged dryer vent can be a fire hazard. Ideally the vent should be rerouted to flow in a more horizontal direction.
394. **Too Long:** The clothes dryer vent piping is too long and may reduce dryer efficiency or possibly accumulate lint, creating a fire hazard. We recommend proper dryer vent piping be installed. The general rule for dryer venting is the piping should be no longer than 14 feet with a maximum of two 90 degree bends. For each extra 90 degrees the length must be reduced by two feet. The manufacturer's instructions should be reviewed and followed if different from the standard rule.
395. **Gas Connector Outdated:** See #214.
396. **Improper Drain Piping:** The clothes washer waste water piping should be installed so the trap is located above the floor level. The vertical stand pipe should be between 18 and 30 inches in length. There should be a vent connection on the waste piping past the trap. The trap and vent piping are often not accessible to inspection. Older laundry drain pipes are typically 1-1/2 inches in diameter. Two inch piping is required in new construction to provide adequate capacity.
397. **Add Catch Pan and Drain:** Washers over wood flooring or on the second floor may leak and cause damage. Washers in such locations should be provided with a catch pan that has a drain pipe.
398. **1½ Inch Drain:** Older clothes washer drain lines are often 1-1/2 inches in diameter and can only carry nine gallons per minute maximum. Some new washers discharge up to thirteen gallons per minute. If a new washer is installed, it may be necessary to install a two inch drain line with a 15 gallon per minute capacity. A determination of waste piping adequacy is beyond the scope of this inspection.
399. **Flex Drain:** See #381.
400. **Gas Fired Water Heater Nearby—Caution:** When a water heater is located near the laundry equipment special care is needed to avoid lint accumulation. It is especially important to keep fabric and other combustibles well away from the water heater to avoid a potential fire hazard.

WET BAR

- 401. Flex Plastic Supplies: See #380.
- 402. Flex Drain: See #381.
- 403. GFCI: See #204.
- 404. Ungrounded 3-Hole: See #203.

KITCHEN

- 405. **Exhaust Fan:** A damaged, missing, or greasy exhaust fan screen can be a fire hazard. We recommend screens be cleaned periodically along with the fan motor and vent pipe above, if necessary. Damaged screens should be replaced.
- 406. **Air Gap:** Air gap devices are required for dishwashers to assure separation between disposer or sink waste water and the dishwasher. An air gap is typically mounted in a hole on the sink, and has flexible hoses that run to both the dishwasher and the disposer (or sink drain pipe if there is no disposer).
- 407. **Disposer Wiring Loose:** The disposer power cord should be firmly clamped to the base of the disposer. This clamp is often left off, creating a hazardous condition where the cord could be easily pulled out exposing the "hot" end.
- 408. **Romex Wiring:** Romex wiring (non-metallic sheathed cable) has a solid copper wire and is not suitable for use as an appliance cord. A standard appliance cord is flexible and will not break with repeated movement.
- 409. **Switch Location Hazardous:** Disposer switches should not be placed on the front of a cabinet as they can be reached by children or turned on accidentally. A preferred location is above the countertop or behind a cabinet door.
- 410. Flex Plastic Supplies: See #380.
- 411. Flex Drain: See #381.
- 412. **Unducted Fan:** Newer exhaust fans are often unducted and are not connected to the exterior. The fan returns the filtered air back into the living space.
- 413. GFCI: See #204.
- 414. Ungrounded 3-Hole: See #203.
- 415. **Light Flickers:** Kitchen lights may dim when appliances are operated at the same time. Appliances and lights should be provided with separate circuits. Rewiring by an electrician may be necessary to eliminate this condition.
- 416. **Insufficient Outlets:** Appliances, such as refrigerators, computers, microwave ovens, and clothes washers, typically have three-prong plugs and need conveniently placed three-hole grounded outlets. Modern kitchens require receptacles every 4 feet along countertops and within 24 inches of the kitchen sink. Each individual countertop area should have at least one receptacle.