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TENNESSEE RESIDENTIAL PROPERTY CONDITION DISCLOSURE

- 1 PROPERTY ADDRESS 7942 Hamilton Mill Dr. CITY Chattanooga
- 2 SELLER'S NAME(S) Gary T. Robb & Cheryl A. Robb PROPERTY AGE 1993
- 3 DATE SELLER ACQUIRED THE PROPERTY 1997- DO YOU OCCUPY THE PROPERTY? yes
- 4 IF NOT OWNER-OCCUPIED, HOW LONG HAS IT BEEN SINCE THE SELLER OCCUPIED THE PROPERTY?
- 5 (Check the one that applies) The property is a ☒ site-built home ☐ non-site-built home
- 6 The Tennessee Residential Property Disclosure Act requires sellers of residential real property with one to four dwelling
7 units to furnish to a buyer one of the following: (1) a residential property disclosure statement (the "Disclosure"), or (2) a
8 residential property disclaimer statement (permitted only where the buyer waives the required Disclosure). Some property
9 transfers may be exempt from this requirement (see Tenn. Code Ann. § 66-5-209). The following is a summary of the
10 buyers' and sellers' rights and obligations under the Act. A complete copy of the Act may be found at
11 <http://www.state.tn.us/commerce/boards/trec/index.shtml>.
- 12 1. Sellers must disclose all known material defects and must answer the questions on the Disclosure form in good faith to
 - 13 the best of the seller's knowledge as of the Disclosure date.
 - 14 2. Sellers must give the buyers the Disclosure form before the acceptance of a purchase contract.
 - 15 3. Sellers must inform the buyers, at or before closing, of any inaccuracies or material changes in the condition that have
 - 16 occurred since the time of the initial Disclosure, or certify that there are no changes.
 - 17 4. Sellers may give the buyers a report or opinion prepared by a professional inspector or other expert(s) or certain
 - 18 information provided by a public agency, in lieu of responding to some or all of the questions on the form (See Tenn.
 - 19 Code Ann. § 66-5-204).
 - 20 5. Sellers are not required to have a home inspection or other investigation in order to complete the Disclosure form.
 - 21 6. Sellers are not required to repair any items listed on the Disclosure form or on any past or future inspection report unless
 - 22 agreed to in the purchase contract.
 - 23 7. Sellers involved in the first sale of a dwelling must disclose the amount of any impact fees or adequate facility taxes
 - 24 paid.
 - 25 8. Sellers are not required to disclose if any occupant was HIV-positive, or had any other disease not likely to be
 - 26 transmitted by occupying a home, or whether the home had been the site of a homicide, suicide or felony, or act or
 - 27 occurrence which had no effect on the physical structure of the property.
 - 28 9. Sellers may provide an "as is", "no representations or warranties" disclaimer statement in lieu of the Disclosure form
 - 29 only if the buyer waives the right to the required disclosure, otherwise the sellers must provide the completed Disclosure
 - 30 form (See Tenn. Code Ann. § 66-5-202).
 - 31 10. Sellers may be exempt from having to complete the Disclosure form in certain limited circumstances (e.g. public
 - 32 auctions, court orders, some foreclosures and bankruptcies, new construction with written warranty or owner has not
 - 33 resided on the property at any time within the prior 3 years. See Tenn. Code Ann. § 66-5-209).
 - 34 11. Buyers are advised to include home and wood infestation, well, water sources, septic system, lead-based paint, radon,
 - 35 mold, and other appropriate inspection contingencies in the contract, as the Disclosure form is not a warranty of any kind
 - 36 by the seller, and is not a substitute for any warranties or inspections the buyer may desire to purchase.
 - 37 12. Any repair of disclosed defects must be negotiated and addressed in the Purchase and Sale Agreement; otherwise, seller
 - 38 is not required to repair any such items.
 - 39 13. Buyers may, but do not have to, waive their right to receive the Disclosure form from the sellers if the sellers provide a
 - 40 disclaimer statement with no representations or warranties (see Tenn. Code Ann. § 66-5-202).



- 41 14. Remedies for misrepresentations or nondisclosure in a Property Condition Disclosure statement may be available to
 42 buyer and are set out fully in Tenn. Code Ann. § 66-5-208. Buyer should consult with an attorney regarding any such
 43 matters.
- 44 15. Representations in the Disclosure form are those of the sellers only, and not of any real estate licensee, although
 45 licensees are required to disclose to all parties adverse facts of which the licensee has actual knowledge or notice.
- 46 16. Pursuant to Tenn. Code Ann. § 47-18-104(b), sellers of newly constructed residences on a septic system are prohibited
 47 from knowingly advertising or marketing a home as having more bedrooms than are permitted by the subsurface sewage
 48 disposal system permit.
- 49 17. Sellers must disclose the presence of any known exterior injection well, the results of any known percolation test or soil
 50 absorption rate performed on the property that is determined or accepted by the Department of Environment and
 51 Conservation, and whether the property is located within a Planned Unit Development as defined by Tenn. Code Ann. §
 52 66-5-213 and, if requested, provide buyers with a copy of the development's restrictive covenants, homeowner bylaws
 53 and master deed. Sellers must also disclose if they have knowledge that the residence has ever been moved from an
 54 existing foundation to another foundation.

55 The Buyers and Sellers involved in the current or prospective real estate transaction for the property listed above
 56 acknowledge that they were informed of their rights and obligations regarding Residential Property Disclosures, and that this
 57 information was provided by the real estate licensee(s) prior to the completion or reviewing of a Tennessee Residential
 58 Property Condition Disclosure, a Tennessee Residential Property Condition Disclaimer Statement, or a Tennessee Residential
 59 Property Condition Exemption Notification. Buyers and Sellers also acknowledge that they were advised to seek the advice
 60 of an attorney on any legal questions they may have regarding this information or prior to taking any legal actions.

61 The Tennessee Residential Property Disclosure Act states that anyone transferring title to residential real property must
 62 provide information about the condition of the property. This completed form constitutes that disclosure by the Seller. The
 63 information contained in the disclosure is the representation of the owner and not the representation of the real estate licensee
 64 or sales person, if any. This is not a warranty or a substitute for any professional inspections or warranties that the purchasers
 65 may wish to obtain.

66 **Buyers and Sellers should be aware that any sales agreement executed between the parties will supersede this form as**
 67 **to the terms of sale, property included in the sale and any obligations on the part of the seller to repair items identified**
 68 **below and/or the obligation of the buyer to accept such items "as is."**

69 INSTRUCTIONS TO THE SELLER

70 Complete this form yourself and answer each question to the best of your knowledge. If an answer is an estimate, clearly
 71 label it as such. The Seller hereby authorizes any agent(s) representing any party in this transaction to provide a copy of this
 72 statement to any person or entity in connection with any actual or anticipated sale of the subject property.

73 A. THE SUBJECT PROPERTY INCLUDES THE ITEMS CHECKED BELOW:

- | | | |
|---|---|--|
| 74 <input checked="" type="checkbox"/> Range | <input type="checkbox"/> Wall/Window Air Conditioning | <input checked="" type="checkbox"/> Garage Door Opener(s) (Number of openers <u>3</u>) |
| 75 <input type="checkbox"/> Ice Maker Hookup | <input type="checkbox"/> Window Screens | <input type="checkbox"/> ___ Garage Door Remote(s) |
| 76 <input checked="" type="checkbox"/> Oven | <input checked="" type="checkbox"/> Fireplace(s) (Number) ___ | <input type="checkbox"/> Intercom |
| 77 <input type="checkbox"/> Microwave | <input checked="" type="checkbox"/> Gas Starter for Fireplace | <input type="checkbox"/> TV Antenna/Satellite Dish (excluding components) |
| 78 <input checked="" type="checkbox"/> Garbage Disposal | <input checked="" type="checkbox"/> Gas Fireplace Logs | <input type="checkbox"/> Central Vacuum System and attachments |
| 79 <input type="checkbox"/> Trash Compactor | <input checked="" type="checkbox"/> Smoke Detector/Fire Alarm | <input checked="" type="checkbox"/> Spa/Whirlpool Tub |
| 80 <input checked="" type="checkbox"/> Water Softener | <input checked="" type="checkbox"/> Patio/Decking/Gazebo | <input type="checkbox"/> Hot Tub |
| 81 <input checked="" type="checkbox"/> 220 Volt Wiring | <input type="checkbox"/> Installed Outdoor Cooking Grill | <input checked="" type="checkbox"/> Washer/Dryer Hookups |
| 82 <input type="checkbox"/> Sauna | <input type="checkbox"/> Irrigation System | <input type="checkbox"/> Pool <input type="checkbox"/> In-ground <input type="checkbox"/> Above-ground |
| 83 <input checked="" type="checkbox"/> Dishwasher | <input type="checkbox"/> A key to all exterior doors | <input checked="" type="checkbox"/> Access to Public Streets |
| 84 <input type="checkbox"/> Sump Pump | <input checked="" type="checkbox"/> Rain Gutters | <input checked="" type="checkbox"/> All Landscaping and all outdoor lighting |
| 85 <input type="checkbox"/> Burglar Alarm/Security System Components and controls | | |
| 86 <input type="checkbox"/> Current Termite contract with _____ | | |



87 ☐ Heat Pump Unit #1 _____ Age (Approx)

88 ☐ Heat Pump Unit #2 _____ Age (Approx)

89 ☐ Heat Pump Unit #3 _____ Age (Approx)

90 ☒ Central Heating Unit #1 17 Age ☒ Electric ☐ Gas ☐ Other

91 ☒ Central Heating Unit #2 17 Age ☒ Electric ☐ Gas ☐ Other

92 ☐ Central Heating Unit #3 _____ Age ☐ Electric ☐ Gas ☐ Other

93 ☒ Central Air Conditioning #1 17 Age ☒ Electric ☐ Gas ☐ Other

94 ☒ Central Air Conditioning #2 17 Age ☒ Electric ☐ Gas ☐ Other

95 ☐ Central Air Conditioning #3 _____ Age ☐ Electric ☐ Gas ☐ Other

96 ☒ Water Heater #1 17 Age ☐ Electric ☒ Gas ☐ Solar ☐ Other _____

97 ☐ Water Heater #2 _____ Age ☐ Electric ☐ Gas ☐ Solar ☐ Other _____

98 ☐ Other _____ ☐ Other _____

99 Garage ☒ Attached ☐ Not Attached ☐ Carport

100 Water Supply ☒ City ☐ Well ☐ Private ☐ Utility ☐ Other _____

101 Gas Supply ☒ Utility ☐ Bottled ☐ Other

102 Waste Disposal ☒ City Sewer ☐ Septic Tank ☐ Other _____

103 Roof(s): Type shingles Age (approx): 16

104 Other Items:

108 To the best of your knowledge, are any of the above NOT in operating condition? ☐ YES ☒ NO

109 If YES, then describe (attach additional sheets if necessary):

116 **Leased Items:** Leased items that remain with the Property are (e.g. security systems, water softener systems, etc.):

120 If leases are not assumable, it will be Seller's responsibility to pay balance.

121 **B. ARE YOU (SELLER) AWARE OF ANY DEFECTS/MALFUNCTIONS IN ANY OF THE FOLLOWING?**

Wall above window has bow.

	YES	NO	UNKNOWN		YES	NO	UNKNOWN
122 Interior Walls <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Roof Components <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
123 Ceilings <i>Seen</i> <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Basement <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
124 Floors <i>Donor report</i> <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Foundation <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
125 Windows <i>Replaced</i> <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Slab <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
126 Doors <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Driveway <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
127 Insulation <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Sidewalks <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
128 Plumbing System <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Central Heating <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



		YES	NO	UNKNOWN		YES	NO	UNKNOWN
129	Sewer/Septic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Heat Pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
130	Electrical System	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Central Air Conditioning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
131	Exterior Walls	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Double Paned or Insulated Window and/or Doors	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

If any of the above is/are marked YES, please explain:

Masonite chipped, units have needed Freon

Please describe any repairs made by you or any previous owners of which you are aware (use separate sheet if necessary).

Reshingled roof, Roof vent,

	C. ARE YOU (SELLER) AWARE OF ANY OF THE FOLLOWING:	YES	NO	UNKNOWN
138	1. Substances, materials or products which may be environmental hazards such as, but not limited to: asbestos, radon gas, lead-based paint, fuel or chemical storage tanks, methamphetamine, contaminated soil or water, and/or known existing or past mold presence on the subject property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
139				
140				
141				
142				
143	2. Features shared in common with adjoining land owners, such as walls, but not limited to, fences, and/or driveways, with joint rights and obligations for use and maintenance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
144				
145				
146	3. Any authorized changes in roads, drainage or utilities affecting the property, or contiguous to the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
147				
148	4. Any changes since the most recent survey of the property was done? Most recent survey of the property: <input type="checkbox"/> (check here if unknown)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
149				
150				
151	5. Any encroachments, easements, or similar items that may affect your ownership interest in the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
152				
153	6. Room additions, structural modifications or other alterations or repairs made without necessary permits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
154				
155	7. Room additions, structural modifications or other alterations or repairs not in compliance with building codes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
156				
157	8. Landfill (compacted or otherwise) on the property or any portion thereof?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
158				
159	9. Any settling from any cause, or slippage, sliding or other soil problems?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
160	10. Flooding, drainage or grading problems?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
161	11. Any requirement that flood insurance be maintained on the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
162	12. Is any of the property in a flood plain?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
163	13. Any past or present interior water intrusions(s) from outside home, standing water within foundation and/or basement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
164				
165	If yes, please explain. If necessary, please attach an additional sheet and any available documents pertaining to these repairs/corrections.			
166				
167				
168				
169				
170	14. Property or structural damage from fire, earthquake, floods, landslides, tremors, wind, storm or wood destroying organisms?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
171				
172	If yes, please explain (use separate sheet if necessary).			
173				
174				
175				
176	If yes, has said damage been repaired?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



		YES	NO	UNKNOWN
177	15. Any zoning violations, nonconforming uses and/or violations of	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
178	"setback" requirements?			
179	16. Neighborhood noise problems or other nuisances?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
180	17. Subdivision and/or deed restrictions or obligations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
181	18. A Condominium/Homeowners Association (HOA) which has any authority	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
182	over the subject property?			
183	Name of HOA: <u>Hamilton Mill Homeowners</u>	HOA Address: <u>7910 Hamilton Mill Drive</u>		
184	HOA Phone Number: _____	Monthly Dues: <u>\$11/month pay \$132.00/year</u>		
185	Special Assessments: <u>NONE</u>	Transfer Fees: <u>NO</u>		
186	Management Company: <u>NO</u>	Phone: <u>N/A</u>		
187	Management Co. Address: <u>N/A</u>			
188	19. Any "common area" (facilities such as, but not limited to, pools, tennis	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
189	courts, walkways or other areas co-owned in undivided interest with others)?			
190	20. Any notices of abatement or citations against the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
191	21. Any lawsuit(s) or proposed lawsuit(s) by or against the seller which affects	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
192	or will affect the property?			
193	22. Is any system, equipment or part of the property being leased?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
194	If yes, please explain, and include a written statement regarding payment			
195	information.			
196				
197				
198	23. Any exterior wall covering of the structure(s) covered with exterior	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
199	insulation and finish systems (EIFS), also known as "synthetic stucco"?			
200	If yes, has there been a recent inspection to determine whether the structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
201	has excessive moisture accumulation and/or moisture related damage?			
202	<i>(The Tennessee Real Estate Commission urges any buyer or seller who encounters this product to have a qualified</i>			
203	<i>professional inspect the structure in question for the preceding concern and provide a written report of the</i>			
204	<i>professional's finding.)</i>			
205	If yes, please explain. If necessary, please attach an additional sheet.			
206				
207				
208	24. Is heating and air conditioning supplied to all finished rooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
209	If the same type of system is not used for all finished rooms, please explain.			
210				
211				
212				
213	25. If septic tank or other private disposal system is marked under item (A), does	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
214	it have adequate capacity and approved design to comply with present state			
215	and local requirements for the actual land area and number of bedrooms and			
216	facilities existing at the residence?			
217	26. Is the property affected by governmental regulations or restrictions requiring	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
218	approval for changes, use, or alterations to the property?			
219	27. Is this property in a historical district or has it been declared historical by	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
220	any governmental authority such that permission must be obtained before			
221	certain types of improvements or aesthetic changes to the property are made?			
222	28. Does this property have an exterior injection well located anywhere on it?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
223	29. Is seller aware of any percolation tests or soil absorption rates being	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
224	performed on the property that are determined or accepted by			
225	the Tennessee Department of Environment and Conservation?			
226	If yes, results of test(s) and/or rate(s) are attached.			



YES NO UNKNOWN

227 30. Has any residence on this property ever been moved from its original
228 foundation to another foundation? ☐ ☒ ☐

229 31. Is this property in a Planned Unit Development? Planned Unit Development
230 is defined pursuant to Tenn. Code Ann. § 66-5-213 as "an area of land,
231 controlled by one (1) or more landowners, to be developed under unified
232 control or unified plan of development for a number of dwelling units,
233 commercial, educational, recreational or industrial uses, or any combination
234 of the foregoing, the plan for which does not correspond in lot size, bulk or
235 type of use, density, lot coverage, open space, or other restrictions to the
236 existing land use regulations." Unknown is not a permissible answer under
237 the statute. ☒ ☐

238 **D. CERTIFICATION.** I/We certify that the information herein, concerning the real property located at
239 7942 Hamilton Mill Dr., Chattanooga, TN 37421
240 is true and correct to the best of my/our knowledge as of the date signed. Should any of these conditions change prior to
241 conveyance of title to this property, these changes will be disclosed in an addendum to this document.

242 Transferor (Seller) Gary T. Robb Date May 5, 2013 Time 2:00 P

243 Transferor (Seller) Cheryl A. Robb Date May 5, 2013 Time 2:00 P
244 Cheryl A. Robb

245 Parties may wish to obtain professional advice and/or inspections of the property and to negotiate
246 appropriate provisions in the purchase agreement regarding advice, inspections or defects.
247
248

249 **Transferee/Buyer's Acknowledgment:** I/We understand that this disclosure statement is not intended as a substitute for any
250 inspection, and that I/we have a responsibility to pay diligent attention to and inquire about those material defects which are
251 evident by careful observation. **I/We acknowledge receipt of a copy of this disclosure.**

252 Transferee (Buyer) _____ Date _____ Time _____

253 Transferee (Buyer) _____ Date _____ Time _____

254 If the property being purchased is a condominium, the transferee/buyer is hereby given notice that the transferee/buyer is
255 entitled, upon request, to receive certain information regarding the administration of the condominium from the developer or
256 the condominium association as applicable, pursuant to Tennessee Code Annotated §66-27-502.

NOTE: This form is provided by TAR to its members for their use in real estate transactions and is to be used as is. This form contains language that is in addition to the language mandated by the state of Tennessee pursuant to the disclosure requirements of the "Tennessee Residential Property Disclosure Act". Tennessee Code Annotated § 66-5-201, et seq. By downloading and/or using this form, you agree and covenant not to alter, amend, or edit said form or its contents except as where provided in the blank fields, and agree and acknowledge that any such alteration, amendment or edit of said form is done at your own risk. Use of the TAR logo in conjunction with any form other than standardized forms created by TAR is strictly prohibited. This form is subject to periodic revision and it is the responsibility of the member to use the most recent available form.





PREPARED FOR:

MR. CHRIS KARACALIDIS
GRANGE MUTUAL CASUALTY INSURANCE COMPANY
4000 RUSSELL PARKWAY
WARNER ROBINS, GEORGIA 31088

CHERYL AND GARY ROBB
7942 HAMILTON MILL DRIVE
CHATTANOOGA, TENNESSEE 37421-2761
CLAIM NUMBER: **HP0001483425**
DONAN PROJECT NUMBER: 12-12080810-0

PREPARED BY:

DONAN ENGINEERING CO., INC.
500 C AMBROSE AVENUE NW
KNOXVILLE, TENNESSEE 37921
865-688-7220

AUGUST 30, 2012

MATTHEW G. RICHARDSON, P.E.
SENIOR FORENSIC ENGINEER

John G. Donan, Jr., P.E.
Chairman of the Board

J. Lyle Donan, P.E.
President



CORRESPOND TO:
500 C Ambrose Avenue NW
Knoxville, Tennessee 37921
865-688-7220
865-688-7276 fax

August 30, 2012

Mr. Chris Karacalidis
Grange Mutual Casualty Insurance Company
4000 Russell Parkway
Warner Robins, Georgia 31088

RE: **Cheryl and Gary Robb**
7942 Hamilton Mill Drive
Chattanooga, Tennessee 37421-2761
Claim Number: HP0001483425
Donan Project Number: 12-12080810-0

Dear Mr. Karacalidis:

At your request, on August 20, 2012, a study was made on the house at the above-referenced address. The purpose of the study was to determine if hail damaged the roof shingles, and to determine the cause of the water stain. Mrs. Robb was present to point out areas of concern and to provide firsthand information. This letter, with the attached photographs and EagleView document, is the report of my findings and conclusions.

Description of Property

For purposes of this report, the house is considered to face north toward Hamilton Mill Drive. The house is a one and one-half-story, wood-framed structure over a basement (Photographs 1 and 2). The exterior walls are covered with a combination of brick veneer and hardboard siding, and the roof is clad with three-tab, fiberglass-mat asphalt shingles. According to Mrs. Robb, the house was built in 1992, and the family has lived there since 1994. Aerial photographs and a roof layout diagram, with dimensions and slope references, can be found in the EagleView report attached as Appendix A.



P.O. Box 182758
Columbus, Ohio 43218-2758
478.971.2000 or 1.800.342.3785
FAX 1.800.342.8089
grangeinsurance.com

September 04, 2012

Cheryl Robb
7942 Hamilton Mill Dr
Chattanooga, TN 37421-2761

RE: Insured: Cheryl Robb
 Claim: HP0001483425
 Date of Loss: 03/02/2012

Dear Cheryl Robb:

This letter follows our conversation regarding the above claim. As discussed, the engineer's inspection found no storm damage to the roof. I have enclosed a copy of their report for your review. Based on these findings and the interior stain repairs not exceeding your policy deductible we have closed our file without payment.

Your homeowner's policy allows one year from the date of loss for your claim to be concluded.

This letter should not be construed as a waiver of any of the terms, requirements and conditions of our insurance contract with you, or as a waiver of any right, claim or potential defense there under, all of which we respectfully reserve without qualification or limitation. If you have any questions or concerns please feel free to contact me at (800) 342-3785 ext. 245.

Sincerely,


Christopher Karacalidis
Field Property Manager

As would be expected, the softer the material being struck, the more energy it absorbs and the more heavily it may be deformed. The material properties and underlying support of the object being struck have a significant effect on the amount of the hailstone's kinetic energy that is transferred to the object. For example, soft metals that are not backed or bonded to a solid substrate may be easily damaged during a hailstorm, whereas a similar surface, bonded to a solid substrate, may go undamaged. Light-gauge metal surfaces such as vents, gutters, and downspouts are typically the first surfaces to exhibit signs of hail impact. Dents in light-gauge metal surfaces do not prove damage to asphalt shingles, but this information can provide collateral indicators of the characteristics of the hail that fell.

Collateral Indicators of Hail

A survey of the property was conducted in search of collateral indicators of hail. Such surfaces include, but are not limited to, exterior metal appurtenances, exterior wood surfaces, window wraps and screens, HVAC condenser fins, and metal roof appurtenances such as vents and various caps. Collateral indicators of hail are extremely important in any hail study, as they provide clear and tangible clues about the nature of the hailstorm such as the size of hailstones, the direction from which the hailstones originated, and the density or number of hailstones that fell per unit area. Hail impacts have cleaned off the oxidization of the condenser housings on the east side of the house (Photograph 5). On the roof, cosmetic dents were found in the light-gauge caps, and clean spots were found on algae-stained shingles (Photographs 6 through 8).

Many factors should be considered when estimating the size of hail that impacted a property, including the gauge (thickness) of the metal, the angle of impact, the speed of impact, and the hardness of the hailstone. However, laboratory tests allow us to predict the size of hail based on on-site collateral indicators. In general, dents in light-gauge metals, such as the furnace vent caps, can be up to three times larger than the actual hailstone, whereas dents in heavier-gauge metals may be as small as half of the size of the impacting hailstone.

Based on this study of the collateral indicators, hail up to $\frac{3}{4}$ inch in diameter fell at this site. Most of the hail that fell was $\frac{1}{2}$ inch in diameter and smaller. While larger hail may have impacted this property, no evidence was found in any of the collateral surfaces.



Background

Mrs. Robb reported that on March 2, 2012, severe storms producing hail and strong winds caused widespread property damage throughout Chattanooga, Tennessee and the surrounding area. Tornadoes are known to have accompanied these storms in some area. Several neighborhood homes have received new roofs.

Interior Observations

Mrs. Robb pointed out a stain to the ceiling in one of the upstairs rooms (Photographs 3 and 4). This room is located on the east end of the house.

Hail Damage Defined

Hail damage to asphalt shingles is defined as an identifiable mark of distress caused by hail that has measurably and significantly reduced the integrity or functionality of the overall shingle, where the shingle was sound prior to the hail impact. Hail damage is sometimes found in the form of a fracture of the shingle's fiberglass mat, identified by a deflection (bruise) through the entire thickness of the shingle. It can also be in the form of a mark of significant granule displacement, causing exposure of the asphalt layer of the shingle, but without mat fracture. In severe cases, the hail may have fractured the shingle mat as well as displaced the granules and asphalt, revealing the shingle's underlying fiberglass mat. Regardless, if hail has exposed a significant area of the shingle below the granulated layer of an otherwise sound shingle, the life of the shingle has been reduced, thereby classifying the shingle as "hail damaged."

General Hail Information

When hail strikes a surface, a transfer of energy takes place between the hailstone and the surface it strikes. Some of the hailstone's original kinetic energy may be dispersed as kinetic energy (a bounce), absorbed by the hailstone itself as "strain" energy (especially in instances when hailstones fracture on impact), or transferred to the impacted object as strain energy. The angle of impact plays a large role in determining the amount of energy that is transferred into the object being struck by the hailstone. When a soft material is impacted by hail, the strain energy may increase within the material to the point that localized, permanent deformation occurs.



Controlled laboratory testing has found that hail smaller than 1 inch in diameter lacks sufficient mass to cause a significant loss in functionality or integrity to three-tab, fiberglass-mat asphalt shingles. Hail smaller than 1 inch in diameter can facilitate minor granule loss that is not classified as hail damage because it does not significantly reduce the service life of the impacted shingles.

Study of the Roof Shingles

The roof was studied for evidence of hail damage (Photographs 9 through 12). Shingles with greater susceptibility to hail damage were studied first. Inherently susceptible shingles are those that would have faced the incoming hailstones and those that are less firmly supported from underneath by a rigid roof deck. Shingles that cover ridges, in woven valleys, along edges on a roof, and edges of shingles themselves are inherently more susceptible to hail damage due to the absence of firm backing. This allows an incoming hailstone to fracture the shingle considerably easier than a shingle that is firmly supported. No hail damage was found to any of the shingles on this roof (Photographs 13 and 14).

Evidence of inadvertent man-made damage was found on the shingles of this roof (Photographs 15 through 20). Man-made activities sometimes mar roof shingles and can easily be mistaken for hail. Often the shingles installers will drop or drag equipment or even other shingles across the roof, scarring the shingles. Foot scuffing is also common, particularly along the bottom edge of the shingle tabs. Man-made shingle damage, such as implement gouging, is easily created when the surface of new shingle roofing is hot from sunshine, at which time the shingles become very pliable and impressionable.

Numerous holes were found through the shingles where the roofing contractor installed toe boards (Photographs 21 through 24). Toe boards are required on steeper roof slopes to keep workmen and materials from sliding off. Because roof shingles are installed from the bottom of a roof slope up, toe boards must be secured to the roof deck through the shingles. The holes are generally filled with sealant once the toe boards are removed.

Some areas of this roof are slightly stained by algae growth (Photograph 25). Typically, algae are most common on north-facing roof slopes that do not receive a large amount of direct sunlight, but it can appear on any roof slope. Algae growth is commonly seen on light-colored shingles (dark-colored shingles mask its presence), and it does no harm to the structural integrity of the shingle. To combat this unsightly cosmetic condition, certain types of metal surfaces can



be strategically placed to leach minute particles of the metal on impact with rain, thereby chemically inhibiting algae growth. Washing the shingles with a diluted bleach solution is a common method of algae removal; however, improper cleaning methods may damage the shingles and do more harm than good.

Study of the shingles revealed heat-related distress in the form of heat blisters (Photographs 26 through 30). Shortly after installation, when the asphalt was fresh and volatile organic compounds were still sufficiently contained in the asphalt, these shingles underwent substantial heat buildup that caused the asphalt in the shingle to quickly flash off the volatiles contained in it. As the asphalt heats up, volatile compounds separate from the asphalt mixture and collect as vapor under the granule layer of the shingles, forming small blisters. With continued heating, the blisters continue to grow until the volatiles flash off. As the asphalt weathers and begins to embrittle, the granule covering eventually erodes away. The uncovered blisters are characterized by an open-centered, dome-shaped, or crater-like cavity with a rim resembling a volcano.

Once a heat blister “pops,” the asphalt and granules originally covering it are lost, leaving a hole exposing the interior mat of the shingle. In large quantities, this exposure can allow accelerated weathering and premature failure of the shingles. On this roof, the extent of heat blisters on the shingles suggests a probability of excessive temperature in the attic, normally caused by inadequate ventilation.

Heat blisters may be mistaken for hail damage, as both can lead to granule loss in a circular or elliptical geometry. However, close study shows sharp contrasts between hail damage and heat blisters. Hail creates granule loss that is associated with a depression resulting from the impact of hail on the shingle. With time, the depression may disappear, but the hail mark will retain the appearance of an abrasion, with typically ill-defined edges. On the contrary, heat blisters are not depressions but actually raised domes on the surfaces of the shingles. They have sharp and defined edges, and a small test probe can often be inserted into the gap created between the edge of the heat blisters and the underlying shingle mat.

Several “nail pops” and improperly installed nails were found on this roof (Photographs 31 through 36). A nail pop is the outward progression of a nail fastening a shingle to the roof deck. Nail pops can distress and/or puncture an overlying shingle and can be mistaken as hail damage. Nail pops are common on roofs and can occur from various adverse conditions. They are typically a result of poor attic ventilation, which is in turn the culprit for excessive moisture and/or



thermal expansion and contraction of the wood substrate. But nail pops can also be caused by using improperly sized nails, installing the nails through knots in the wood deck sheathing, or installing nails through the edges of adjacent pieces of sheathing. Nails installed at an angle can also result in distress to overlying shingles.

Roofing fasteners were observed to have been improperly installed throughout the roof. Industry practice for conventional three-tab asphalt or dimensional shingles nailed on slopes ranging up to 21/12 pitch calls for four nails to be installed per shingle where no other adverse conditions such as expected high winds apply (Figure 1).

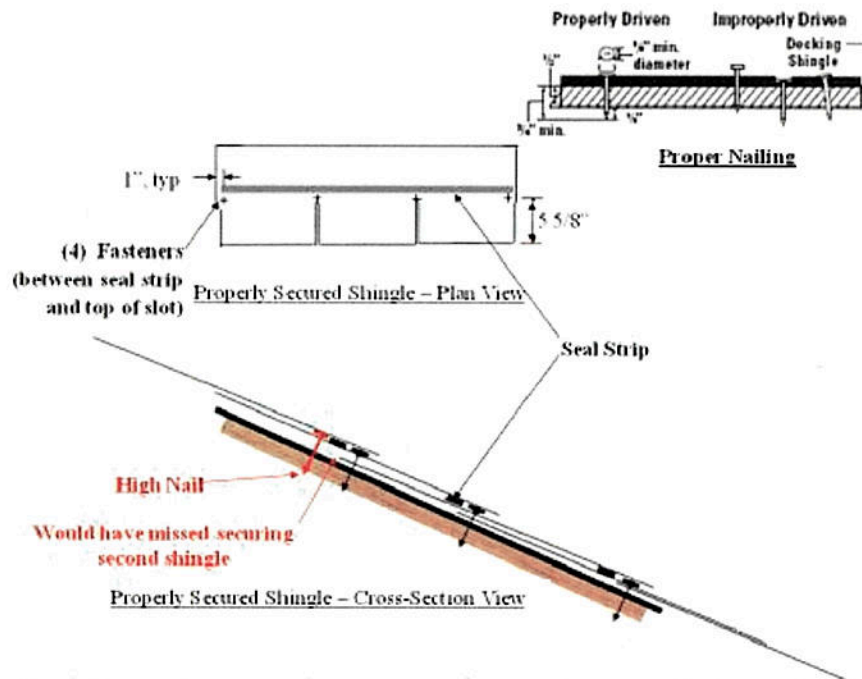


Figure 1: Proper Fastener Installation

All shingles should receive no less than four nails, one at each end and one over each interior cutout (keyway). The nails should be located approximately $5\frac{5}{8}$ inches above the bottom of the shingle, above the upper shingle cover and below the self seal strip for three tab shingles or on the nail line provided by the manufacturer for dimensional shingles. Nails installed below this line are exposed on the roof to the elements and become potential leak sources, and nails through the sealant strip or above the sealant strip (or nail line for dimensional shingles) either undermine its adhesive potential or greatly reduce the shingle's overall



fastening to the roof. It is important to note that although one should install four nails per shingle as shown in the preceding figure, if nailed correctly, each shingle is provided a total of eight nails binding it to the roof deck, as the four nails driven through an overlain shingle also penetrate the top of the underlying shingle (if they too are driven properly).

Additional areas of concern were observed on the roof. The sealant and deteriorated trim at the siding/brick interface over the front door could allow minor water intrusion (Photograph 37). The north-facing side of the chimney is unpainted but cannot be seen from the ground (Photograph 38). The raised fasteners on the flue base and the compromised vent stack and boot on the east end of the roof can allow water intrusion (Photographs 39 and 40). These two locations are the most probable source of the water intrusion that is causing the stain in the eastern upstairs room.

In general, the shingles on this roof are in fair condition, except for the observed heat blisters, inadvertent man-made damage, nail pops, and toe board installation damage. The granule loss experienced by these roof shingles has occurred as a result of normal aging.

Granular-surfaced roof shingles constantly shed granules at varying rates throughout their service life. The accumulation of shingle granules found in the gutters and downspouts is typical of a roof in the first one-third or final one-third of its life; however, granule accumulations can occur anytime, particularly if the gutters are not regularly maintained. As granules are shed, they tend to reside on the shingle surface until a heavy rain or even small hail facilitates their progression into the gutters.

During the first few years, granules not firmly embedded into the bitumen matrix are easily lost due to various causes. These lost granules do not affect the aging rate of the roof shingles. However, during the final stage of the shingle's life, many of the volatile components within the bitumen matrix have evaporated, causing the shingle mat to shrink. As this occurs, granules are slowly shed, exposing more of the shingle mat to the sun's radiation. Consequently, shrinkage of the asphalt mat increases, facilitating accelerated granule loss. This process continues until the shingle mat is sufficiently exposed and deteriorated, such that the watertight condition of the roof system is compromised.



Summary of Conclusions

In summary, based on what is known at this time, I am of the opinion that:

- Evidence of 3/4-inch diameter hail impact was found in the form of cosmetic dents and clean spots.
- Hail smaller than 1 inch in diameter is incapable of damaging sound three-tab, fiberglass-mat asphalt shingles.
- Any hail that has impacted this roof was of insufficient mass and velocity to compromise the integrity and functionality of these shingles.
- No hail damage was found to the shingles on this roof.
- The shingles on this roof have inadvertent man-made blemishes caused by workmen or others, algae growth, heat blisters, nail pops, toe board damage, and improperly-installed nails.
- The water intrusion that is causing the interior stain is originating at the compromised vent stack and boot, and at the compromised fasteners for the flue base.

We appreciate your confidence in our professional services.

Sincerely,
DONAN ENGINEERING CO., INC.



Matthew G. Richardson, P.E.
Senior Forensic Engineer

Attachments



