

Richard Romanski
916 Burnt Mountain Drive
Snowmass Village, CO 81615
Ph: 609-712-7737
Email: romanski@telemarknetworks.com

09/27/18

Re: Wood shake roofs at Owl Creek Townhomes

Richard,

I have inspected the roof at 916 Burnt Mountain Drive located in the Owl Creek Homes HOA in Snowmass Village per your request in order to determine the existing condition of the roof along with its related components and appurtenances. I have evaluated the various roof slopes to determine the estimated life remaining for which the wood shake roof and underlying waterproofing should perform to protect the interior of the property.

The condition of the existing wood shake shingles varies across the roof depending on the slope and location on the roof. The roof slopes that are more protected from the sun and elements such as those over the north and west facing slopes are in better condition than those on the south facing slope where there is the greatest exposure to the sun. The wood shake installed at the southern facing slopes are badly worn and in need of replacement. The ridge cap at the top of the roof is also in worse condition on the south side where the majority of wood shake ridge shingles are worn and split apart where the staples holding them together have rusted. The roof is protected by the underlying lace felt and ice and water shield installed at the roof deck. These layers are worn where exposed at the back slope due to holes in the wood shake shingles.

The back, southern, roof slope should be repaired or “tuned up” within the next couple of years while the front, left and right roof slopes need minor repairs. The wood shake shingles on the remaining roof slopes are expected to last from 5 to 10 years before needing to be replaced. You will find more details in the following inspection report along with my recommendations.

This information is based on my engineering, construction and inspection experience over the last 34 years, including the last 18 years in the roofing industry. I have personally inspected, estimated, specified and/or project managed the installation of over two thousand roofs for properties located in Colorado. This includes but is not limited to all types of steep and low slope roofing, and exteriors. I am also a certified trainer and have written and taught various types of roof training programs and seminars.

Don't hesitate to contact me regarding this information I am happy to answer any questions you may have.

Sincerely

Daniel Cupit

Daniel J. Cupit
Roofing Consultant
HAAG Certified Inspector
NRCA ProCertified Trainer

PURPOSE

Inspect the roofs at Owl Creek Homes in Snowmass Village, Colorado and prepare a brief report to document the existing condition of the roofs along with the expected life of the various roof components. There is a total of 31 roofs within this subdivision. In order to accomplish this, I inspected the subject roof located at 916 Burnt Mountain Drive within the development as a typical example of the condition of the existing roofs.

BACKGROUND

The existing wood shake roofs currently installed on the homes located within the Owl Creek subdivision are reported to have been installed during the original construction of the homes in 1996. Wood shake roofs were common at the time with extensive supply of wood shake shingles available in various grades rated from A through C or more commonly from premium select then grades 1 through 3. The existing wood shake shingles appear to be grade one hand split wood shake cedar shingles.

The wood shake shingle market has diminished over the years and as such supply is not as readily available resulting in increased cost for the wood shake shingles and a reduction in quality. Therefore, any repairs should be made with a minimum number one grade or premium select medium cedar shake shingles.

On or about August 30th, 2018 I was contacted to inspect the existing wood shake roofs to determine their condition and the expected life remaining. I inspected the sample roof located at 916 Burnt Mountain Drive within the Owl Creek Subdivision on September 11th, 2018 in detail including the wood shake shingles along with all roof components and appurtenances. This report provides my findings

QUALIFICATIONS

The following report is based on my inspection of the property located at 916 Burnt Mountain Drive in Snowmass Village Colorado along with my personal industry experience over the last 34 years. That includes engineering, construction and inspection experience 18 years of which has been in the roofing industry. I have inspected over two thousand residential and commercial roofs over the years. During that time, I have specified, supervised and/or managed the installation of over 2,000 roofing and/or exterior projects and a significant number of framing jobs and interior finishes. I am very familiar with the different types of roofing and siding along with their components and various installation methods.

Over the last 9 years I have trained multiple personnel in the inspection, estimating and installation of a wide variety of steep and low slope roof systems. I am an NRCA ProCertified Trainer, HAAG Certified Roofing Inspector and have my OSHA 10-hour certification. I helped start the roofing education program for the Colorado Roofing Association and wrote our initial curriculum for our introduction to roofing classes. I was on the Colorado Roofing Association State Licensing committee in 2009 and 2010 and helped form our Code and Standards committee in 2013 on which I am still active. I am active on the RCI (International Roofing Consultants) board and am a member of the Colorado Chapter of the International Code Council and the City of Arvada Code Review Board.

As a roofing consultant I provide inspection and design build services for a wide variety of residential and commercial roofing projects along with investigations and expert witness work for construction defects and property damage insurance claims. I am intimately familiar with most types of steep and low slope roofing systems including but not limited to asphalt shingles, wood shake, tile, metal and synthetic steep slope roofs to built-up, single ply, EPDM, and modified low slope roofs and also vegetative roof systems. I have consulted on projects from small single-family residences to large industrial buildings, commercial roof structures, apartment buildings, and multiple unit condominiums. My experience is outlined in the attached CV.

The information contained herein is what I have determined is the existing condition of the existing roof system and what is required to for the immediate to long term performance of the roofs.

PROCEDURE

I personally inspected the roof and at the subject property in detail. From this inspection I compiled the photos, and details of the existing roof installation including all roof components and appurtenances. I have evaluated the condition and remaining life of the wood shake shingles and roof components based on HAAG Engineering standards, along with industry standards and my personal experience. The results of my findings are provided below.

FINDINGS AND DISCUSSION

Following are the findings from the roof inspection performed on September 11th, 2018. The Roof Inspection Details provides a summary of the roof components and their condition followed by more detailed information under the Existing Roof section. Photos of the inspection are provided following this report.

A. ROOF INSPECTION DETAILS

The details from the roof inspection are provided in the chart on the following page. This chart provides the type of roof component along with the existing condition and expected life remaining of each item based on the parameters proved above.

Roof Inspection Details

Owl Creek Homes

916 Burnt Mountain Drive Snowmass Village, CO 81615

9/11/2018

Roof Details	
Built:	1996 (21 to 22 years old)
Building Type:	Wood frame construction
Roof Type:	Wood Shake
Roof Style:	Gable with hips and dormers
Roof Slope:	7.5 with 3.0 low slope and 10.0 dormers
Eave width:	8 to 24-inches
Gable width:	8 to 24-inches

Roof Components	Type	Condition	Life (yrs.)	Notes
Sheathing	Solid wood (type unknown)	Unknown	-	
Roof Covering	Med. Cedar Wood Shake Shingles	See Chart Below		
Ridge Cap	" "	Fair	3 to 5	
Starter Strip	" "	Good	10+	
Underlayment	40# Asphalt Impregnated Interlace Felt	Good	7+	Poor where exposed
Ice & water Shield	Grace synthetic ice & water shield entire roof	Good	7+	Poor where exposed
Drip Edge	Copper with 3-inch vertical face	Good	10+	
Rake Metal	Copper with 3-inch vertical face	Good	10+	
Valleys	Copper W-Valley	Good	10+	
Step Flashing	10 x 10 Copper	Good	10+	
Kick-outs	1.5" x 1.25" Copper	Good	10+	
Head Wall Flashing	Copper with 1.5" to 2" exposure	Good	10+	Too short
Transition Flashing	Copper with 2" to 3" exposure	Good	10+	Too short
Chimney Flashing	Copper step and head wall flashing	Good	10+	
Cricket	Copper saddles	Good	10+	
Counter Flashing	None - all flashings installed under stucco	-		
Chimney Chase	Copper (riveted and soldered)	Good	10+	
Chimney Flue Cap	Copper	Good	10+	
Pipe Jacks	Lead flashing	Good	10+	
Roof Vents	None	-		Required by code
Exhaust Vents	None	-		
Soffit Vents	None	-		
Stack Flashings	None	-		
Storm Collars	None	-		
Gas Caps	None	-		
Satellite Dish	Direct TV dish	Okay	10+	Seal attachments
Gutters	Copper Half Round	Good	10+	
Downspouts	Copper Round	Good	10+	
Snow Fence	Copper 2 bars, 1 row per slope 24" from eave	Good	10+	Base 36" on center
Heat Tape	Heat cable (brand undetermined)	Okay	5+	Eaves, valleys, side walls
Heat Tape Clips	Copper	Okay	5+	
Fascia	Double 2x12 + 2 x 6 cedar with 6.5" exposed	Good	3+	before requiring paint
Insulation	Interior - none on roof	Unknown		

B. EXISTING ROOF STRUCTURE

The existing building at 916 Burnt Mountain Drive in Snowmass was built in 1996 with wood frame construction. The exterior is stucco and stone siding with cedar fascia and trim. The roof is 21+ years old and is a medium wood shake roof with copper flashings. The roof is framed with gables and dormers with Dutch style hips. The main roof slope averages at 7.5 in 12 inches with several low slope shed roof dormers on the upper roof at 3 in 12 and the steep slope dormers at 10 in 12. The eaves and gables have open framing with no soffits. The width of the eaves is up to 24-inches wide at the lower levels down to 8-inches wide at most of the upper roofs. The same is true at the gables.

The front of the home faces Northeast at mostly north and 20 degrees east. For the purposes of this report the roof slopes are referred to as the Front Slope facing North, the Right Slope West, Back Slope South, and the Left Slope East.

C. EXISTING ROOF COMPONENTS AND CONDITION

The following roof components and appurtenances were identified and evaluated during my inspection of the subject roof. The chart following this section provides the condition of the roof at each slope along with that of each roof component. A

1. Wood Shake Shingles (2-10 years left depending on the slope)

The existing roof covering is medium hand split cedar wood shake shingle approximately ½” thick at the butt end. The wood shake shingles are in good condition on the protected north and west slopes, okay condition on the east slope and are badly worn in fair to poor condition on the southern slope. There are a significant number of wood shake shingles on the roof that are curled, split, or that have holes in them. Most of these are on the back (southern) slope. A breakdown of the condition of the wood shake shingles is provided in the table below.

Wood Shake Details

Owl Creek Homes 916 Burnt Mountain Drive Snowmass Village, CO 81615
9/11/2018

Cedar Wood Shake Shingles (No. 1 hand split)

Location	Direction	Life ¹	Curled ²		Missing ³ Qty	Split ⁴		Holes ⁵		Ridge ⁶ Qty
			#/SQ	Qty		#/SQ	Qty	#/SQ	Qty	
Front Slope	North	7-10	1.5	24	-	1.5	24	0	0	Life 3-5
Right Slope	West	7-10	2	17	-	2	17	0	0	
Back Slope	South	2-3	5	118	-	15	353	11	259	
Left Slope	East	5-7	4	34	-	3	25			
Totals				192	7		418		259	149

1. Life: is the expected lifespan remaining in years on that slope for the wood shake shingles to protect the roof
2. Curled: number of wood shake shingles that are badly curled up
3. Missing: number of missing wood shake shingles on that slope
4. Split: number of wood shake shingles with significant weathered splits in multiple locations
5. Holes: number of wood shake shingles with holes worn through them
6. The number of split / separated ridge cap
7. #/SQ: equals the quantity of wood shake shingles with that condition per square which is equal to 100 square feet
8. Qty equals the estimated total quantity on the roof

Worn wood shake shingles that are curled, have multiple splits and/or holes in them should be replaced within the next 2 years with premium select or number one graded medium cedar wood shake shingles as graded by the Cedar Shake & Shingle Bureau.

2. Ridge Cap (1-3 years left without repairs being made)

The existing ridge cap is a standard medium cedar shake shingle stapled together with 2-inch staples. There is 10 x 10 copper flashing installed under the ridge cap to further protect the ridge and Grace ice and water shield under that. The existing ridge cap has started to split and separate which is normal for a 20+ year old wood shake roof as the wood shake weathers and the staples rust over time. Approximately a third of the existing ridge cap is split or separated and should be replaced within the next year or two. It is recommended that the entire ridge cap be replaced within the next 5 years.

3. Starter Shingles (7-10 years life remaining)

The existing starter shingles are medium cedar shake shingles as is standard for a wood shake roof.

4. Underlayment (7-10 years left expect in areas where the underlayment is exposed)

The existing roof has a full layer of Grace ice and water shield installed at the roof deck as the waterproofing layer. The wood shake is also interlaced with 40# asphalt impregnated felt which meets code and industry standards. In areas where the underlayment is exposed it should be replaced and covered with new wood shake or 10 x 10 metal flashing.

5. Ice & Water Shield (7-10 years life remaining)

As noted above there is a full layer of Grace ice and water shield installed at the roof deck to meet code requirement and manufacturer specifications for the use of ice barrier at the eaves in areas where the mean temperature in January is below 32 degrees to prevent leakage from ice dams. It is typical for roof installations at elevations above 8,000 feet to install a full layer of ice and water shield.

6. Drip Edge (10+ years life remaining)

The existing drip edge is fabricated from a minimum 26-gauge copper that has a 3-inch exposed vertical face with a kickout. The length of the flashing onto the roof was not able to be determined but is likely 3-inches or more which meets the code requirement of extending at least 2-inches onto the roof deck or sheathing. The existing copper drip edge flashing is in good condition and expected to last well past the next 10 years. This flashing can be reused when installing a new if care is taken to protect it from damage during tear-off of the existing roof.

7. Rake Edge Metal (10+ years life remaining)

The existing rake edge metal is a drip edge style flashing fabricated from a minimum 26-gauge copper that has a 3-inch exposed vertical face with a kickout. The length of the flashing onto the roof deck appears to meet the code requirement of extending at least 2-inches onto the roof deck or sheathing. The existing copper rake edge flashing is in good condition and expected to last well past the next 10 years. This flashing can be reused when installing a new if care is taken to protect it from damage during tear-off of the existing roof.

8. Valleys (10+ years life remaining)

The existing valleys are covered with a copper W-Valley metal that appears to meet the current code requirement of a minimum 26 gauge and 20-inch width extending a minimum of 10-inches from each side of the centerline. The valley metal is in good condition and expected to last at least another 10 years. The existing valley flashing can be reused for a re-roof if care is taken to protect it from damage.

9. Step Flashing - Side Walls (10+ years life remaining)

The existing side wall flashing appears to be a 10 x 10 copper step which meets the 2015 IRC R905.2.8.3 requiring base flashing against a side wall to be no less than 4-inches in height and to direct water away from the wall. The existing step flashing is installed underneath the stucco and is in good condition with an expected life remaining of at least 10 years. This flashing can be reused when installing a new roof if care is taken to protect it from damage during tear-off of the existing roof.

10. Kickout Flashing (10+ years life remaining)

Kick-out flashings are required by current IRC code where the side wall flashing meets the head wall or eave. The existing "kick-outs" are fabricated from the 26. Gauge copper step flashing and are approximately 1-1/4 inches high x 1-1/2 inches long. These flashings should be replaced with new kick-outs that are at least 1-1/2-inches high by 2-inches long when a new roof is installed.

11. Head Wall Flashing (10+ years life remaining)

The existing head wall flashing is the same 26-gauge copper as the other flashings and installed underneath the stucco like the step flashing. This flashing appears to extend up the walls but is only 1-1/2 to 2-inches long where it extends out from the wall and over the shingles. This end of the flashing should be a minimum of 4-inches and preferably 5-inches over the shingles. It is recommended that this flashing be replaced or extended to the specified length when the roof is replaced.

12. Transition Flashing (10+ years life remaining)

The transition flashing is the same 26-gauge copper as the other flashings and installed at the transition from the 7.5 to 3.0 slope roof. The exposed portion of the flashing that extends over the shingles is only 2 to 3-inches long and should extend at least 5-inches over the shingles. It is recommended that this flashing be replaced or extended to the specified length when the roof is replaced.

13. Chimneys (10+ years life remaining)

- 1) **Flashing:** The Chimneys are flashed with the same side and head wall flashing described above, is installed under the stucco and is same size as those in items 9 and 11. There is no counter flashing at the chimneys as the flashing is installed behind the stucco.
- 2) **Cricket:** The chimneys are installed with crickets at the upslope head walls in order to divert water around the chimney wall. These crickets are copper saddles installed with a ridge and valley pan. The crickets are properly installed and should last a minimum of 10 years or more.
- 3) **Chase:** The chimney chases are fabricated from 26-gauge copper that is riveted and soldered to seal the joints. The chimney chases are in good condition and should last 10 years or more.
- 4) **Flue Caps:** The chimney flue caps are fabricated as a full screened in cover fabricated from copper. These flue caps are in good condition and should last another 10 years or more.

14. Pipe Jacks (10+ years life remaining)

The existing pipe vent flashings are lead pipe jacks. These pipe jacks are in good condition and expected to last 10 years or more. These flashings will likely need to be replaced with a metal or polyethylene pipe jack such as an ultimate pipe flashing when the roof is replaced, as lead pipe jacks are no longer allowed in many jurisdictions. These pipe jacks have 10 years or more life remaining.

15. Ventilation (Required but none existing)

- 1) **Roof Vents:** Roof ventilation is required by code and manufactures as a critical component of the roof system to prevent premature aging of the roof system and condensation that can cause damage to the interior. Code requires a minimum of 1 square foot for every 300 square feet of attic or roof cavity space. Roof vents or ridge venting will need to be installed with a new roof.
- 2) **Intake Vents:** Intake or soffit vents are required for proper through ventilation through the roof cavity or attic. Double ventilation of 1 in 150 can be installed in place of intake vents.
- 3) **Exhaust Vents:** There are no existing kitchen or bath vents on the roof.

16. Satellite Dish (10+ years life remaining)

There are one or more satellite dishes installed on the roof. These appear to be properly sealed but would need to be detached, reset, and resealed with any reroof.

17. Gutters and Downspouts (10+ years life remaining)

- 1) **Gutters:** The existing gutters are a 6.5-inch half round copper gutter supported with copper brackets. These gutters are in good condition and are expected to last 10 years or more. These gutters will need to be detached and reset during a reroof.
- 2) **Downspouts:** The existing downspouts are 3-inch round copper with copper straps. These downspouts are in good condition and are expected to last 10 years or more.

18. Snow Fence (10+ years life remaining)

The existing snow fence is comprised of 2 x 1-inch copper tubes secured by copper brackets installed 36 inches on center. There is one row of snow fence above most eaves installed 24-inches up from the end of the roof slope. The snow fence is in good condition and expected to last 10 years or more.

19. Heat Tape (5+ years life remaining)

The existing heat tape is a heavy-duty self-regulating heat cable. The heat cable is installed at the eaves, valleys and side walls and is secured with copper brackets. A controller and sensors may exist but were not located. The heat cable appears to be in good operating condition but should be checked for performance by testing the resistance of each line to ensure they are functioning properly. Heat tape and related appurtenances should be checked every 2 to 3 years. The existing heat cable is expected to perform 5 years or more with proper maintenance.

20. Fascia (5+ years life remaining)

The existing fascia is installed with a 2x12 cedar sub fascia and 2 x 6 outer fascia with 6.5-inches of exposure. The cedar fascia is painted and in good condition. It is expected to last up to 5 years before it has to be repainted.

SUMMARY AND CONCLUSION

After conducting a detailed inspection of the property and evaluating the available information and data contained in this report, it is my opinion that:

The existing wood shake roof is over 21-years old and in better condition than what would normally be expected being installed over solid sheathing. Most medium wood shake roofs installed over solid sheathing show significant wear within 15 to 20 years. Even so, there is significant wear to the wood shake shingles on various portions of the roof especially on the southern facing back slope where it is to be expected.

There are approximately 7 missing shingles on the roof and multiple wood shake shingles that are curled, split and that have holes worn through them. This is especially true on the back (southern) slope where the wood shake shingles are worn thin with over 350 with multiple splits and up to 250 or more with holes worn through the wood shake leaving exposed felt and/or ice and water shield. The front, right and left roof slopes have some curled and split wood shake shingles, but none were found with holes. The wood shake shingles in these areas are significantly thicker and in better condition. It is common for wood shake shingles to wear more quickly on the slopes with southern exposure. Many of the cedar shake ridge cap shingles are split and separated where the staples holding them together have rusted. This is a normal occurrence on wood shake roofs over 15 years old. The ridge cap shingles are also worn more significantly on the back southern facing slopes.

The existing roof is currently in need of repair or replacement as it has already preformed past its expected life. It is common to repair or tune up wood shake roofs that have started to show signs of aging. This usually occurs at 15 years or more in age in Colorado's dry climate. A roof repair should encompass replacing the missing, curled, split and worn wood shake shingles along with the separated ridge cap. 10 x 10 flashing can also be installed under the wood shake with holes in lieu of replacement. The wood shake detail chart shown in item 1. above under wood shake shingles estimates just over 1,000 wood shake shingles that need to be replaced. On a steep 7.5 and 10.5 slope roof in Snowmass Village this type of repair is estimated to cost up to \$15,000 or more. A repair can be expected to last up to 5 years when other shingles will have worn and require replacement. The roof should be repaired every 3 to 5 years until it is replaced.

The other option to address the issues with the existing roof is to replace it within the next 2 years. If replacement is delayed beyond that, the roof should be repaired to prevent leakage in those areas where the felt has already been compromised. As stated above the roof flashings are in good shape and many can be reused with a reroof if care is taken to preserve them. Other flashings like the head wall flashings and transition metal that are too short will need to be replaced.

Common roof types to replace wood shake shingles are concrete tile, metal, stone coated steel, synthetic shake and slate and heavy asphalt shingles. All of these roof types can be expected to last up to 25-years or more if properly installed.

Sincerely

Daniel Cupit

Daniel J. Cupit
Roofing Consultant
HAAG Certified Inspector
NRCA ProCertified Trainer

Owl Creek Townhomes

916 Burnt Mountain Drive Snowmass Village, CO 91615

09-11-18



916 Burnt Mountain Drive - Owl Creek Townhomes.



Front (north) elevation.



Front (north) elevation right side.



Right (west) elevation.



Right (west) elevation.



Back (south) elevation at left end.

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Back (south) elevation.



Back (south) elevation at right end.



Left (east) elevation at southeast corner.



Left (east) elevation at right end.



Top of roof from the east end facing west.



Top of roof from the middle facing east.

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Top of roof from the west end facing northeast.



Top of roof from the west end facing east.



Rake edge at front left gable.



Front eave over garage shows drip edge and half Round copper gutter.



Snow fence at the front lower roof.



Closeup of snow fence bracket.

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Deck with head wall flashing at the front lower roof.



Roof slope reads at 7.5 in 12 slope which is a steep slope roof.



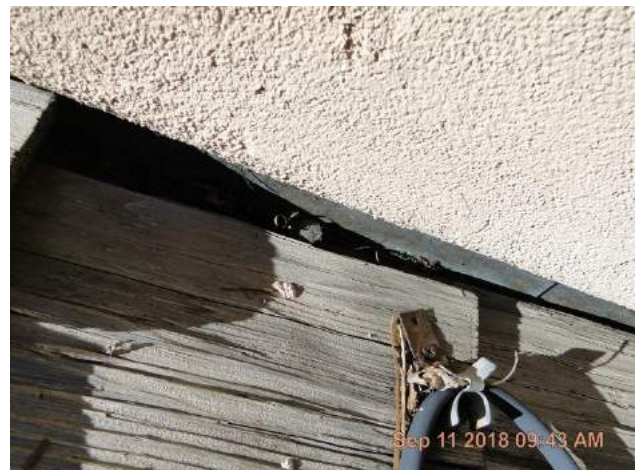
Front lower roof below deck shows head wall flashing and snow fence.



Front eave over entrance.



Front roof head and side wall at left of deck.



Opening at side wall flashing on front roof slope.

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Copper W-valley at front slope where it meets the large dormer at the right (northwest) side.



End of copper valley at side wall.



There are several lower slope dormer shed roofs that register at a roof slope of 2.5 to 3 requiring double felt.



Front side wall view from top of roof shows fascia at gables, heat tape and side wall.



Transition from steep 7.5 slope roof to 2.8 slope roof.

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Copper transition metal is only 3-inches wide.



Front slope side wall at lower slope dormer. Shows The side wall flashing and rake edge metal.



Rake edge metal at front dormer shed roof.



Close up of copper rake edge metal.



Copper drip edge metal is 2.5" high at the eaves.



Close up of copper drip edge and wood shake starter.

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Snow fence installed on front dormer shed roof.



Front roof slope between decks shows heat tape.



Side wall right of the front dormer shed roof with heat tape installed.



Heat tape is attached with copper clips.



Close up of heat tape / cable also shows a gap at the rake metal to drip edge transition.



Close up of gable to eave transition shows close up of gutter and gutter attachment.

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Chimney with copper saddle / cricket. Valley dead ends at the chimney side wall.



Close up of copper saddle / cricket.



Damaged saddle / cricket.



Closeup of chimney at cricket valley to side wall.



Copper valley at chimney side wall.



Head wall flashing is only 2-inches wide

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Close up of side wall to head wall flashing detail at chimney shows 1-1/4" high x 1-1/2" long kick-out flashing



Copper chimney chase with screened cage around chimney flue. Chase is riveted and soldered together.



Closeup of copper screened cage at chimney flue.



Roof slope at back elevation from top of roof shows lead pipe jack.

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Lead pipe vent flashings (pipe jacks).



Close up of lead pipe jack.



Wood shake shingles at front roof slope.



Front roof slope at steep 10/12 front dormer.



Close up shows missing shake shingle.



Left (east) slope of large front dormer roof to the right of the front entrance.

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Front steep slope dormer facing northeast



Curled shake shingle at front dormer is at higher risk to crack and separate from the roof.



Top of roof facing south shows ridge cap.



The ridge cap is a standard medium wood shake ridge cap that is staples together. These staples rust over time causing the ridge cap to separate and split.



Left (west) side of front dormer shows some split shingles and others that are curled up do to the uneven Drying of wood shake that occurs over solid sheathing.



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Wood shake at front dormer has detached.



Left (west) slope of rear dormer.



Top of roof toward the middle facing south



Transition from steep to lower slope roof at the back (south) elevation.



Back roof slope.



Back roof slope shows curled shake shingles.

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Badly curled wood shake shingle at the back roof slope.



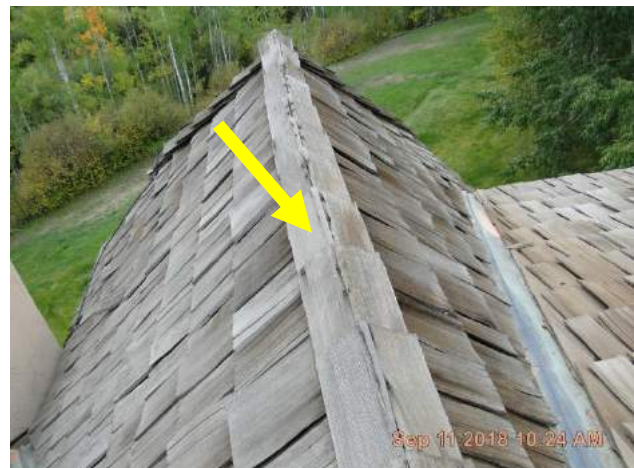
Copper transition metal and W-Valley metal at back, rear dormer



Back (south) elevation shows a considerable number of split shingles.



Split and worn wood shake at the back (south) slope. Wood shake shingles on the back slope are significantly thinner than the front slope due to weathering.



Ridge cap at small steep dormer at back roof slope.

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Ridge cap at back slope is split from the 2-inch staples rusting out. There is 10-inch copper step flashing installed under the wood shake at the ridge cap to protect the roof.



Badly split and rusted ridge shingle.



Weathered and split wood shake at the back slope.



Badly split wood shake on back slope.



There are a significant number of wood shake shingles on the back slope with holes in them.

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Close up of wood shake shingles with holes worn through them shows the top layer of felt has also been worn through leaving the bottom layer of ice & water shield remaining to protect the roof deck and interior.



Large hole in shingles shows exposed ice and water shield below interlacing felt.



One section at the back slope shows weathered and split wood shake with 4 holes worn through them.



Low slope roof at the back elevation is badly worn.