



Oregon Roof Consulting and Inspection

No-Nonsense Roofing Advice for Property Owners: Affordable ~ Thorough ~ Versatile ~ Capable

Serving the Portland Metro area and all of Oregon: (503) 654-4612

Oregon CCB: 199121 ~ WA Lic: OREGORC871MR

PO Box 220190, Milwaukie, OR 97222

Resume' ~ Track Record ~ Experience ~ Qualifications ~ History

Please note : I have 42 years of legitimate verifiable experience as a laborer / grunt / gopher for my brother's roofing business in the 60's, the better part of 3 decades as a roofing contractor, 6 years as an estimator / project manager for 2 large roofing companies and am now nearing the end of my 9th year as the owner / operator of Oregon Roof Consulting and Inspection. I have personally installed over 1,000 roofs and have done at least 14,000 roofing estimates back in the roofing days. Oregon Roof Consulting has participated in 5 courtroom hearings and 16 arbitration hearings in Oregon and Washington and 19 on site CCB mediation meetings in Oregon - all as an expert witness, so, we are familiar with the roofing trade.

I have done work for but not limited to : Homeowners; Businesses and corporations of all sizes; Insurance companies; Banks; Churches; Relocation companies; Roofing contractors; Investment groups; HOA's; Apartment complexes of all sizes; The State of Oregon; Multiple school districts including West Linn; David Douglass; and every elementary, middle, and high school in both Hood River and Wasco (The Dalles) counties; United States Coast Guard in Astoria; etc. I have done jobs all over Oregon and Washington; All over the San Francisco Bay Area including San Francisco, Oakland, Napa, Richmond, Alameda, Fremont, Pleasanton, Berkeley, Fresno, Sacramento and Reno Nevada. We have also helped with two shingle roofing projects on the remote South Pacific island of Rarotonga (Cook Islands). This is all on my website. See www.oregonroofconsulting.com

Thank you,

Owner of Oregon Roof Consulting & Inspection

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- Affordable ~ Thorough ~ Versatile ~ Capable
- Roofing in Oregon Since 1973
- Project Management & Monitoring
- Inspections ~ Certifications ~ Owner Advocacy

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Joe Sardotz, Owner Operator



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Roof Inspection for : [REDACTED]

Job Address : [REDACTED] ~ Vancouver, Washington 98665

I inspected this roof on November 27th 2021. I met the owner and we got on the roof. I also looked in the attic. The roof is a new Malarkey 'Vista' asphalt laminated shingle in the black color. One layer over OSB (waferboard). Separate photo emails will be sent. Each photo email will be numbered to correspond to the numbered items on the summary report. **Every item on summary will not have photos. The following items should be noted :

1. A permit is required in Clark County. A 2nd permit is required for sheathing replacement if more than 50% of sheathing is replaced. A permit was not pulled. The owner was told by a roofer employee that a permit was pulled but was in a truck that got stolen. The permit has a county inspector paying 2 visits. The homeowner has received verification from officials that a permit is /was required for this job. A Vancouver official said this roof is under the jurisdiction of Clark County. Homeowner will get permit roof will be inspected.
2. Me observing the roof does not void any warranty. If I were to do repairs, do DT (destructive testing) using tools then that (may) partially void the labor warranty. Just observing does not void any warranty in any way.
3. The homeowner showed me some of the old shingles that were in a trailer. These shingles are / were 15 years old. These shingles had / have a 30 year factory warranty. These shingles looked like 15 year old shingles. Granule loss insignificant. Shingles not cupping, curling, cracking. These shingles easily had 15 years left probably longer.
4. The upper roof has ventilation, intake vents and exhaust vents (RVO-38) black metal vents. The lower roofs have intake vents but no exhaust of any kind therefore no air 'flow'. This design flaw is certainly not the roofers' fault. The decking on both lower roof areas had / has failed. It is very loose and 'spongy'. Shouldn't be like that at all. The upper deck is fine. The difference in ventilation is the reason. The OSB on the 2 lower areas has hi / lo areas all over and is very noticeable. The deck should be flat. There should not be 'dips' and 'humps' in these roofs. In my opinion the decking should have been replaced. The owner wanted it replaced and was willing to pay to have it replaced. A neighbor with an identical roof had all decking on their 2 lower

areas replaced with plywood. That owner wanted his replaced. According to this owner the roofer "was not willing to do this". Why is a mystery. My thought is that like all roofers this one is slammed and wanted to race to the next job. If the roofer was not willing / able to replace the decking then the owner could / should have hired a roofer willing to do this part of work. This is a very odd situation here. Poor customer service in this writer's opinion.

5. There should be 2 more attic vents to comply with the 1 in 150 rule. I told the owner that considering there is no mold in the attic then leave it be. Close enough. There is a utility fan venting out of an attic vent. This situation was the same before the roof is done. That vent can not be included in the attic ventilation quotient.
6. The synthetic underlayment was applied with hammer tackers that hold A-11 staples. All manufacturers of synthetic underlayment require that the paper be installed with 'cap nails'. A-11 staples tear the paper which causes leaks. A-11 staples are OK for old school 15 and 30 pound felt but not synthetics.
7. I lifted random shingles all over the lower front roof. Nailing is not remotely close to Malarkey requirements. **See attached Malarkey documents. Nails not spaced evenly, nails both over and under the 2 yellow nailing zone lines, nails over driven, nails directly in shingle joints. Someone was going too fast with the nail gun. Placing a nail isn't that hard. I have done it – millions of times. It's just as easy to put a nail 'here' as it is to put one 'there'.
8. All pipe and vent must have sealant between top of flange and underside of lapping shingles. **See Malarkey attachment.
9. I did not check every lineal foot of eave and rake edges but I found spots where the joint of the starter course was directly or very near the joint of the 1st shingle row. Malarkey wants them 6" apart. Malarkey makes their starter on their 'Windsor' shingle line. The starter is slightly shorter than the 'Vista' shingles. You must cut 6" off of the 1st starter. As you proceed down the roof the distance between the starter and shingles becomes shorter and at 50' the joints are even. So, as you proceed down the roof when the joints become 3" apart you just cut the end of a starter strip and start the process all over. Simple. I also found at the rake edge where there is a starter strip the adhesive on this starter strip is not adjacent to the edge of the roof it is instead at the inward opposite edge. Malarkey wants the adhesive to be adjacent to the edge for wind protection.
10. I have spoken at length with a longtime senior Malarkey Rep and in his words " We warrant our products from product failure regardless of how they are installed. If there are blowoff, leak, or other problems caused by improper installation then our warranty becomes void " .

Conclusion : Malarkey goes through a lot of time and expense to provide online videos and text regarding their installation requirements. This is all easily accessible. Certain things must be done a certain way. Washington goes by the International Building Code. Oregon goes by the Oregon Residential specialty Code. Both codes are worded the same. Both codes' roofing specs are Chapter 9. This roof is not to code.

It is any Contractor's responsibility, obligation, and requirement to 1) Know how a roof system should be installed. 2) Install that roof system correctly.

**** The International Building Code R102.7.1 : 'Additions, alterations or repairs (excluding ordinary repairs) to any structure shall conform to the requirements for a new structure without requiring an existing structure to comply with all of the requirements of this code, unless otherwise stated. Additions, alterations or repairs shall not cause an existing structure to become unsafe or adversely affect the performance of the building.....'. R905.1 : 'Roof coverings shall be applied in accordance with the applicable provisions of this section and manufacturers installation instructions'. R903.1 : ' Roof Assemblies shall be designed and installed in accordance with this code and the approved manufacturers instructions such that the roof assembly shall serve to protect the building or structure '. R105.2 : 'Exemption from permit requirements of this code shall not be deemed to grant authorization for any work to be done in a manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction'. **** A permit may or may not be required in your area. To inquire call local building officials.****

Thank you,



Owner of Oregon Roof Consulting & Inspection

****This document carries no warranty or guarantee. It is an opinion based on industry standards, manufacturers specifications, local codes and my experience****

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Directions for Applying Malarkey Laminate Shingles

GENERAL INSTRUCTIONS

Install Malarkey laminate shingles according to adopted building code and local amendments. To qualify for warranty protection and obtain stated coverage, the installation instructions detailed here must be followed. Contact Malarkey Technical Services or check our website at WWW.MALARKEYROOFING.COM for the most current version.

We assume no responsibility when there has been improper application, failure to properly prepare the surface or provide proper ventilation according to FHA or HUD minimum property standard requirements and adopted building code.

For current warranty information, visit WWW.MALARKEYROOFING.COM/warranty-center.

Standard exposure is 5 $\frac{1}{8}$ " (143 mm) to the weather. Offset between courses is 8" (203 mm). Minimum offset for shingle installation is 4" (102 mm).

These step-by-step application instructions apply to standard slopes/inclines of not less than 4" (102 mm) per 12" (305 mm) or more than 21" (533 mm) per 12" (305 mm). For lower slopes [2" (51 mm) to less than 4" (102 mm) per 12" (305 mm)] and steep slopes [more than 21" (533 mm) per 12" (305 mm)], modify the installation as described below. Do not apply shingles on roofs having a slope less than 2" (51 mm) per 12" (305 mm).

Note: The film strips on each shingle, front and back, prevent shingles from sticking together while in the bundle and are not designed to be removed.

IMPORTANT

- ALWAYS wear fall protection when working on a roof.
- Underlayments can be slippery, particularly when wet or covered with frost. Be careful when walking on them.

Ventilation: To prevent harmful condensation or heat buildup, air must circulate freely under the roof deck. Install roof vents at ridges and eaves. Ventilation provisions must meet or exceed current FHA or HUD requirements and adopted building codes.

Roof Deck: The surface to receive the new roofing should be in good shape and solidly sheathed, constructed of a minimum $\frac{3}{8}$ " (10 mm) thick, exterior-grade plywood, $\frac{7}{16}$ " (11 mm) thick oriented strand board (OSB), or seasoned lumber, nominally 1" (25 mm) thick. Boards should be positioned tight to each other and securely nailed to framing members. Deteriorated or rotted boards should be replaced. For excessively resinous areas and loose knots, cover with sheet metal patches.

Malarkey strongly recommends installing sheathing when wood board decking is the existing substrate. Problems with the performance of your roofing system, such as leaks and buckling, increase if installed directly over wood board decks. Failure to use properly conditioned deck materials can result in deck movement which can damage the roof covering and may void your warranty.

Drip Edge Flashing: In accordance with 2018 International Building Code, Section 1507.2.8.3, and 2018 International

Residential (Building) Code, Section R905.2.8.5, *drip edge flashing* (drip edge, eave or rake metal) is required along the eave and rake edges of shingle roofs.

Install drip edge first along the eaves, and later on the rakes once the field underlayment has been applied.

UNDERLAYMENT

Malarkey makes two types of underlayment, the first being water-resistant, *mechanically-attached* field underlayments Right Start™ UDL and our Secure Start® line of synthetic underlayments.

The second type are waterproof, *self-adhering* underlayments, Arctic Seal® and Secure Start® HT products which are intended for use in cold weather climates that produce ice dams.

Self-adhering underlayment can also be installed as a flashing membrane in areas susceptible to leaks such as roof valleys, roof-to-vertical transitions, and around vents, curbs, skylights and other roof penetrations.

Underlayment is required on roof decks prior to the installation of Malarkey shingles. Your geographical location, weather, degree of roof slope, and type of roof covering will help determine which Malarkey underlayment is right for your situation. Consult local building code for additional guidance.

Complete installation instructions are available on our website at WWW.MALARKEYROOFING.COM.

Other Instructions Common to the Installations that Follow:

- Underlayment is installed parallel to the eaves.
- End laps in the same course should be 6" (152 mm), and staggered 6' (1.8 m) apart in subsequent courses.
- Extend field underlayments 6" (152 mm) over hips, ridges and valleys. Where the roof meets a vertical surface, run the underlayment a minimum of 3" (76 mm) up the wall and secure.
- Once an expanse of roof is covered by underlayment up to the ridge, apply drip edge flashing to the rakes, over the ends of underlayment.

INSTALLATION IN NON-ICE DAM REGIONS

Roof Slopes 4:12 and Greater

Roof slopes 4:12 (4" [102 mm] per 12" [305 mm]) and greater require the installation of a single (1) layer of Malarkey's field underlayment (or code-compliant equivalent) over the entire roof deck.

Install the initial course flush to the eave and trim at the rake. Fasten sufficiently to hold the underlayment in place and work safely until shingles are applied or according to adopted building code. Secure Start® underlayments have bullseye imprints on the material to act as guides for fastening.

Continue working up the roof, subsequent courses overlapping the preceding by 2"-4" (51-102 mm), depending on the type of underlayment being applied. (See Figure 1)

Being 8" wide allows the flashing to be bent at 90 degrees and pushed against the transition of roof to wall, the horizontal flange extending 4" (127 mm) out onto the roof deck and the vertical flange, 4" (127 mm) up the wall assembly. Being 8" long allows individual step flashing pieces to overlap each other in water-shedding fashion as they are installed.

Individual step flashing pieces are integrated with each course of shingles as they are applied to intersect the sidewall. A 1/4"-3/4" (6-19 mm) gap between the shingles and vertical bend of the flashing is recommended.

To allow for possible roof movement, fasten each piece of flashing to the roof deck and not the sidewall.

Installation is as follows: Atop the Smart Start™ starter course at the eave, place the first piece of flashing*. The horizontal flange should be flush with the eave edge of the starter and the vertical flange against the sidewall, counter-flashed by the wall cladding.

Fasten the horizontal flange of the step flashing to the roof deck with two nails placed 1" (25 mm) from the upper edge and spaced an equal distance apart.

Lay a first course shingle down on the roof, positioning it close to the sidewall but leaving a 1/4"-3/4" (6-19 mm) gap between the end of the shingle and vertical bend in the step flashing. Fasten in place. The horizontal flange of the flashing will no longer be visible, but you can still see the vertical flange along the sidewall.

Place the second step flashing atop the first course shingle, and position it up from the eave edge of the shingle, matching the shingle exposure, and fasten as before.

Lay a second course shingle on the roof, position leaving a gap, and fasten.

Place the third step flashing atop that, overlapping the end of the previous step flashing at the point of shingle exposure (overlap is typically 2" [51 mm]).

Continue like this on up to the top of the sidewall intersection, alternating between the placement of step flashing and shingles.

* The "first piece of flashing" in this instance might well be "kickout" flashing, a piece of flashing cut and angled to direct water out and away from the side of a structure.

To accommodate the angled part, yet still serve as the initial piece of step flashing, the kickout will likely have a greater length than a regular piece of flashing. Otherwise, the installation of shingles and step flashing to follow is the same.

(See Figure 13)

ITEM #8
ON SUMMARY

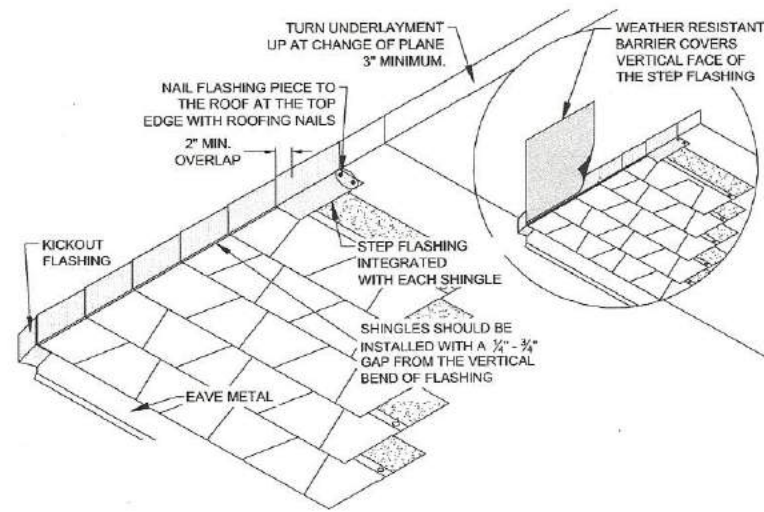


Figure 13 - Step Flashing Application at Roof-to-Sidewall Transitions

***Vent Pipe (and Other Flanged Penetration) Flashing: ***

Install shingle courses up to the vent pipe, and cut a hole in the shingle to be positioned over the pipe. Install the pipe jack or boot (top and side flanges may be set in sealant).

Additional, optional weatherproofing: Unexposed pipe jack flanges (top and both sides) may also be stripped-off with minimum 6" (152 mm) wide Arctic Seal®, covering all fasteners used to secure the flanges, and tying onto the field underlayment a minimum of 3" (76 mm).

Continue roofing around the pipe, cutting shingles to fit on the sides and top of the pipe jack flanges. Ensure shingles extend beyond the downslope side of the pipe itself. Shingles that overlap any part of the flanges should be sealed to the flange with asphalt roof cement conforming to ASTM D4586. Correct amounts should not bleed out from under the shingles; excessive use may cause blistering. Apply pressure to seal. (See Figure 14)

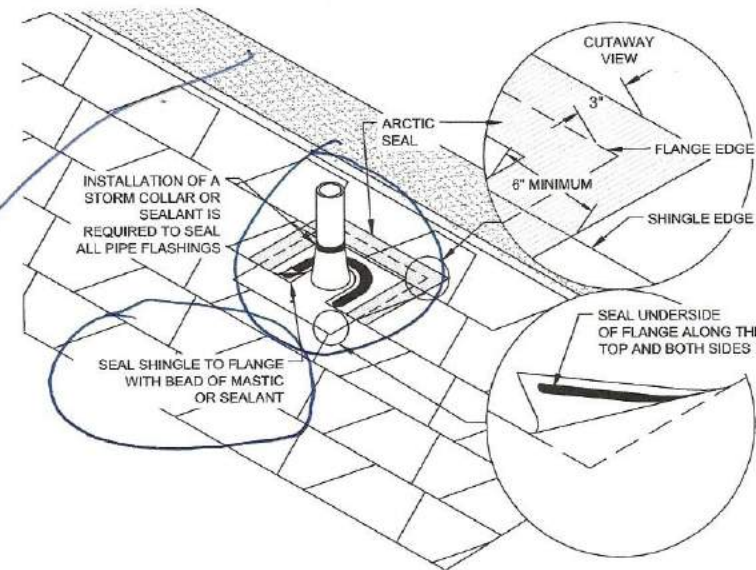


Figure 14 - Vent Pipe Flashing Application

Cap (Counter) and Chimney Flashings: The metal flashing apron for the front of the chimney shall be installed over the last course of shingles below the chimney and its vertical flange extending up the face of the chimney.

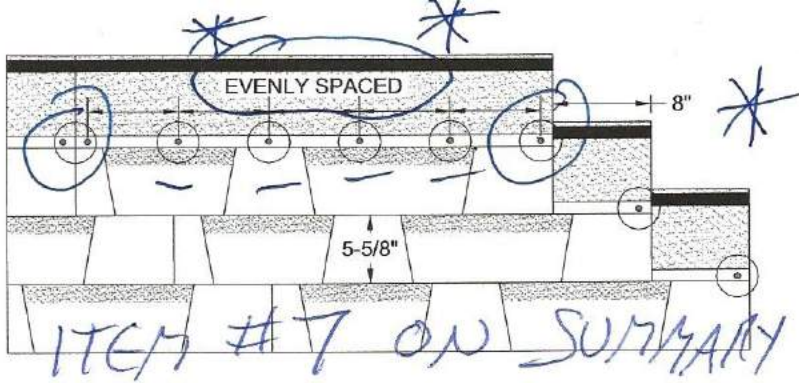


Figure 8 - Laminated, 6-Nail Fastening Pattern

The second, alternate way has the interior fasteners as indicated to accommodate shingle offsets and ensures no nail is less than 2" (51 mm) from the joint of the underlying shingles. (See Figure 9)

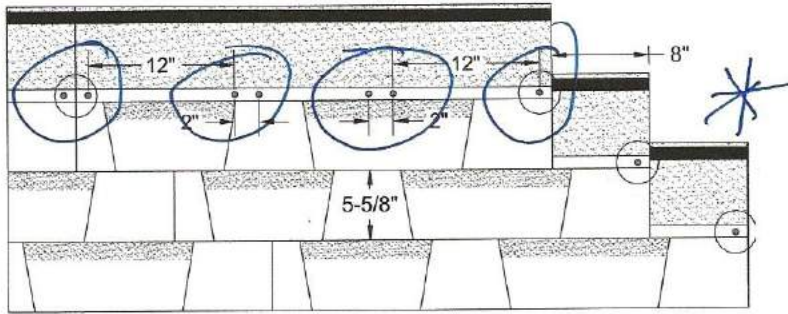


Figure 9 - Laminated, 6-Nail Alternate Fastening Pattern

Note: See Malarkey's *Shingle and Accessory Warranty* online for any additional requirements related to specific coverages.

SHINGLE PATTERN LAYOUT AND APPLICATION

Important: The diagonal application procedures described below are necessary to prevent objectionable patterning. Malarkey is not responsible for such patterning on roofs where this diagonal application is not used. Exposures should be even along the courses as well, or an objectionable appearance may occur.

Malarkey Smart Start™ Starter Shingles: Smart Start™ starter shingles are designed to be separated lengthwise at a perforation so you get two, full-size starter shingles in one. The perforation is in the middle of the shingle, 8³/₁₆" (208 mm) from each edge, and both pieces have seal-down strips. Besides eaves, it is recommended Smart Start™ starter shingles be installed on the rake edges of roof to provide a clean edge and increase wind resistance.

LAMINATE SHINGLE PATTERN LAYOUT (8" [203 MM] OFFSET, FIVE COURSE DIAGONAL METHOD)

Starter Course: Install Malarkey Smart Start™ starter shingles or equivalent conforming to ASTM D3462. Ensure they are positioned with the factory-applied sealant strip face up and the strip adjacent to the eave edge of roof.

Cut 6" (152 mm) off one end of the first starter shingle, and lay it on a lower corner of the roof, overhanging the rake and eave edges by 1/4" - 3/4" (6-19 mm).

Fasten with 4 nails, 1 1/2" - 3" (38-76 mm) up from the eave, with one fastener 1" (25 mm) from each side of the starter and

the remaining two evenly spaced on the same line as the end fasteners. Do not place fasteners in the seal-down strip.

Continue across the eave with full-length starter shingles, butting them loosely together to prevent buckling.

First Course of Shingles: Start the first course with a full-length shingle laid directly over the starter course.

Begin at the same lower corner of roof and apply flush with the edges of the starter course on both eave and rake sides (maintaining the 1/4" - 3/4" [6-19 mm] roof overhang).

Fasten as described in the *Shingle Fastening* section above.

Second through Succeeding Courses: Start the second course with a shingle from which 8" (203 mm) has been cut from one end.

Position the remaining piece over the underlying, first course shingle, and align the bottom edge along a line level with the "sawtooth" overlay, leaving an exposure of 5 5/8" (143 mm). Secure with fasteners.

Courses three through five are begun with partial shingles, each progressively 8" (203 mm) shorter, establishing the overall diagonal pattern. Pieces cut from shingles along the left rake can be used either to continue the diagonal installation pattern or finish off courses at the right rake.

Apply a full-length shingle adjacent to each of the first five courses to extend the pattern. Join the shingles loosely together to prevent buckling. Butt factory edge to factory edge when installing the stairstep method. This helps maintain a straight layout of the remaining shingles.

The sixth course begins again with a full length shingle, so repeat the 1-to-5 course cycle on up the roof.

Shingles may be laid from either lower corner of roof; follow layout and cutting instructions as required for proper application.

Note: Other shingle offsets are acceptable but no less than 4" (102 mm). Straight up application of shingles, or *racking*, is not recommended. (See Figure 10)

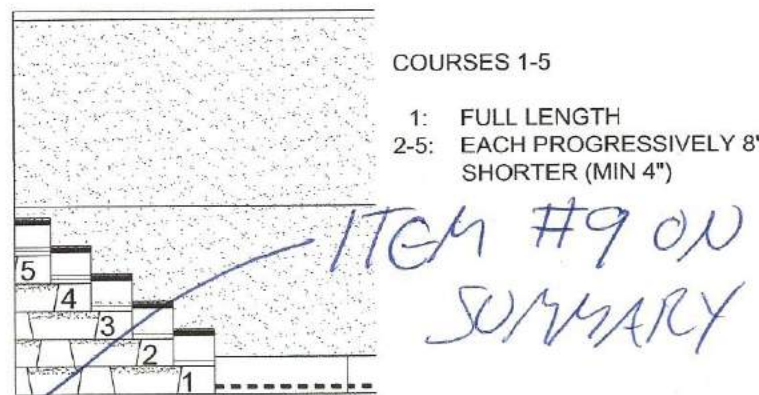


Figure 10 - Laminated Shingle Layout Pattern

CONSTRUCTING ROOF VALLEYS

Similar to a roof deck being prepared for shingles by first applying an underlayment, roof valleys must be likewise prepared before they can be "constructed" with shingles.

Closed-cut and Open Metal Valley applications are recommended for laminate shingles (instructions to follow); the *Open Membrane Valley* style is also acceptable.

Valley Underlayment: Center a full-width strip of self-adhering underlayment (or equivalent conforming to ASTM D1970)