

Technical Bulletin

USE OF SNOW GUARDS

Snow guards are devices used to limit the momentum of snow and ice on sloped roofs, allowing it to fall in smaller, more manageable, less hazardous pieces. Their use is recommended in areas where snow and ice falling off the roof could cause damage to items below, including lower roofs, or bodily harm to people entering, leaving, or walking along the outside of the building.

Snow has a tendency to drift in the valley. Seams of a metal roof are not in the flow direction of the valley. Sliding snow can bend the seams over and can cause leaks with standing seam panels. For this application, heat tape may be used in the valley to keep the water flowing and the snow guards used above the valleys to minimize the drifting in the valleys. The snow guards also minimize the damage to the heat tape that can be caused by sliding snow and ice. Where snow will merely fall to the ground it is best to allow it to do so and remove the weight from the roof.

On very steep pitches, such as 12:12 pitches, snow will tend to slide off immediately and not build up to the point where it will create a problem. As a result, snow guards may not be required on very steep pitches. On shallow pitches, below 2:12, the snow will not tend to slide off the roof; it will melt in place and run off as water. Again, snow guards will not do much good and may not be necessary. Pitches between 2:12 and 12:12 are where snow guards should be considered for use where sliding snow will cause damage to property or people below.

One nice thing about snow guards is the fact that they can be added after the installation of the roof panels, if sliding snow is a problem. Several things, however, must be considered when doing this. First, intentionally holding snow on the roof will add to the live loads on the structure. Most structures are designed based on snow being on the roof, so this should not normally be a problem. But, many of us that live in Northern climates have been thru “snow of a decade” winters where we have been up on our roofs trying to get the weight off the roof. Snow guards make this worse. Next, the additional weight on the roof causes additional drag forces on the standing seam panels. These forces must be resisted by sufficient fasteners at the fix point of the roof, which is normally under the ridge cap. A good rule of thumb is that twice the number of fasteners at the fixed point are required when snow guards are used. (Six per panel instead of the normal three.) The steeper the pitch, the more load on the snow guards and the fixed point fasteners. For systems with non-integral seam caps or batten caps make sure they are also rigidly attached at the fixed point to keep them from sliding off the roof due to the drag of snow and ice or from thermal movement.

Snow guards at the eave should be placed above the bearing wall or slightly upward from that point. When snow guards are used, it is better to use several rows spread out up the slope than one row at the eave. This helps to hold the snow in place instead of letting it slide down the slope and impact the snow guards at the eave. On short runs this is not a problem, but on long runs and steep slopes that impact force can pull the snow guards off the roof. In valley sections, snow guards are normally positioned 3 or 4 feet above the valley.

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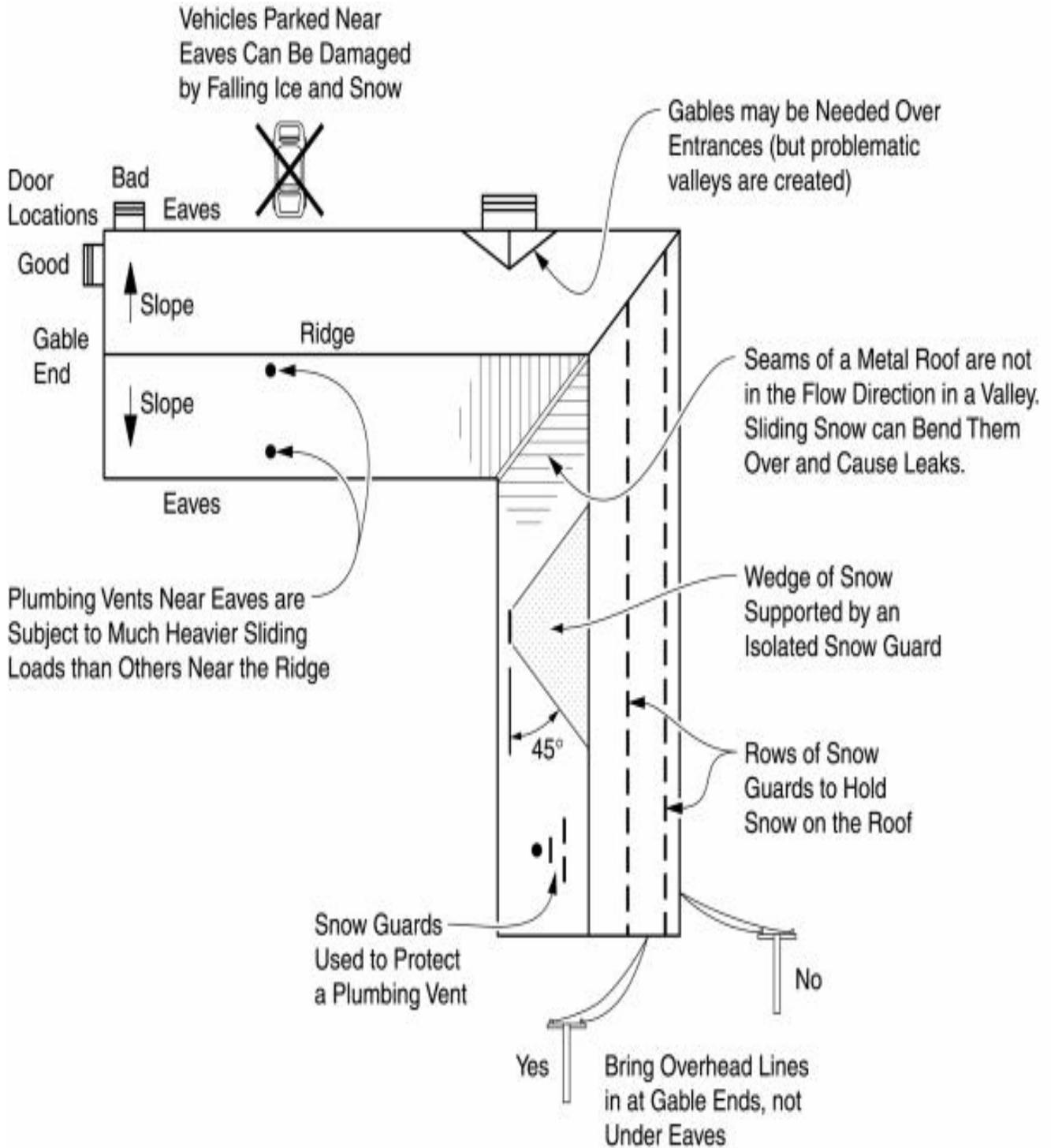
INSTALLATION OF SNOW GUARDS

Glued on snow guards can be used, but they have a tendency to come off. For this reason we recommend the use of screws as well as the adhesive sealant for all exposed fastener panels. The use of clear silicone sealant should be avoided because silicones are acid cured and can damage the paint and metal substrate. The primary fastening system should be screws with all exposed fastener panels. You can order the Surebond SB-190 Everseal adhesive sealant with your Snowguards, The SB-190 Sealant requires 28 days of 50 degree F or warmer temperatures to cure. The adhesive sealant will primarily be used as a sealant with some benefits from the adhesion. The adhesive will accomplish two things- it will seal underneath the guard for water infiltration and add strength to the primary fastening method. In temperatures below 50 degrees Fahrenheit you can still use the SB-190, The adhesive qualities will be affected, but it will not affect the sealing of the snowguard. Since the primary anchoring is the fasteners, the SB-190 is mostly used for sealing and is perfectly acceptable in cold weather applications.

Sentrigard does not recommend the use of screwed on snow guards on standing seam roofs. On standing seam roofs, screwed on snow guards can restrain the designed thermal movement of the panel system. For standing seam panels our recommendation is to use clamped on snow guards. Sentrigard carries a complete line of clamp on snow guards and rail systems manufactured by Berger Building Products. The complete line can be viewed by visiting www.bergerbros.com and clicking on products, then click on snow retention products. The clamp-on style snow guards and rail systems will work with most of Sentrigard's standing seam panels. When applying snow guards to a roof with Climaguard installed, we recommend using the SL-1 Clamp on snow guard. The rail systems will not work with Climaguard due to the width of the seam, the clamp for the rail system will not physically fit over the rib. For verification that the snow guard or rail system you have selected will fit your panel please contact Sentrigard's engineering department by calling 1-800-477-2741. When clamping the snow guard systems to our panels the installation procedures are critical. All the set screws must be installed from the same direction so the mounting bracket is clamped against one side of the rib. Alternating sides on the bracket with set screws will deform the panel side joint and can rip the panel under snow load.

Please see attached for general layouts for both exposed fastener and standing seam panels.

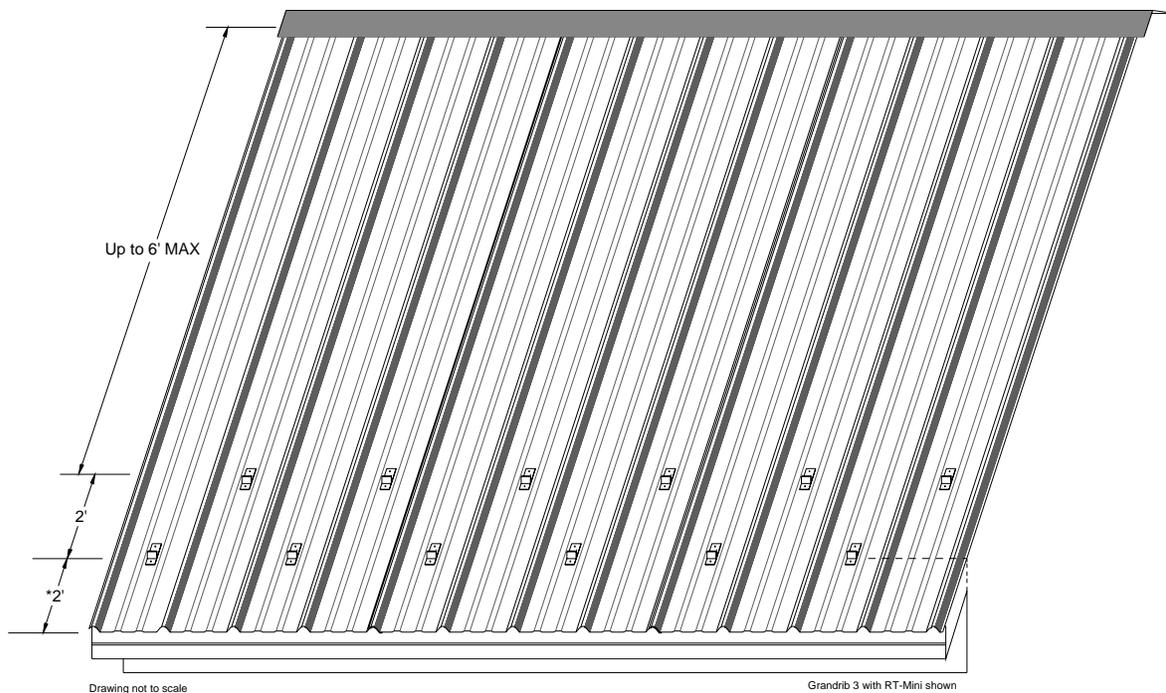
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SNOWGUARDS

Exposed fastener panels
For roof runs under 10'



NOTES:

The above layout is for standard roof ONLY (as described below)

- Pitch between 2.5/12 and 8/12
- Standard gable roofs only (no sidewalls, endwalls, or roofs above that may add extra snow to this roof plane)
- ~contact Sentrigard Engineering for non-standard roofs
- Average snowfall areas (ground snow load 30 lb/sq.ft. or below)

*The first row of snowguards must be at or above exterior load bearing wall.

Roof structure should be examined to determine if the additional snow loads are acceptable.

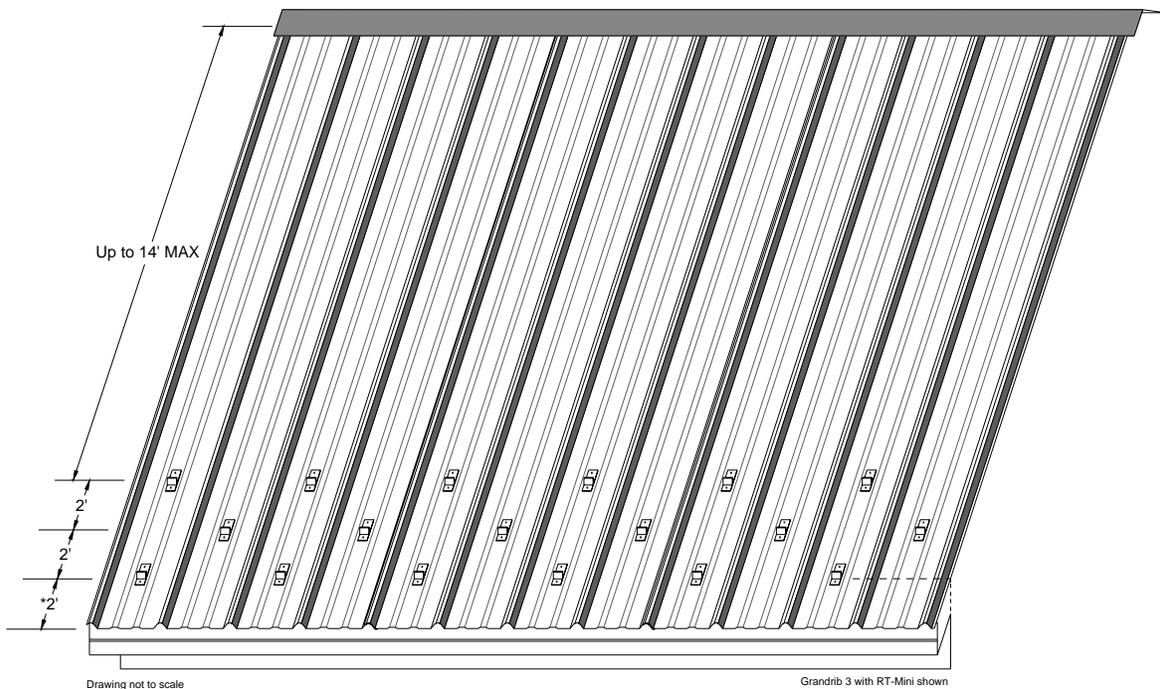
Snow guard patterns provided by Sentrigard are only recommendations. **Actual snow guard patterns should be approved by a licensed architect.**

For more information see Sentrigard Technical Bulletin "404-Condensation and ice damming".

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SNOWGUARDS

Exposed fastener panels
For roof runs 10' - 20'



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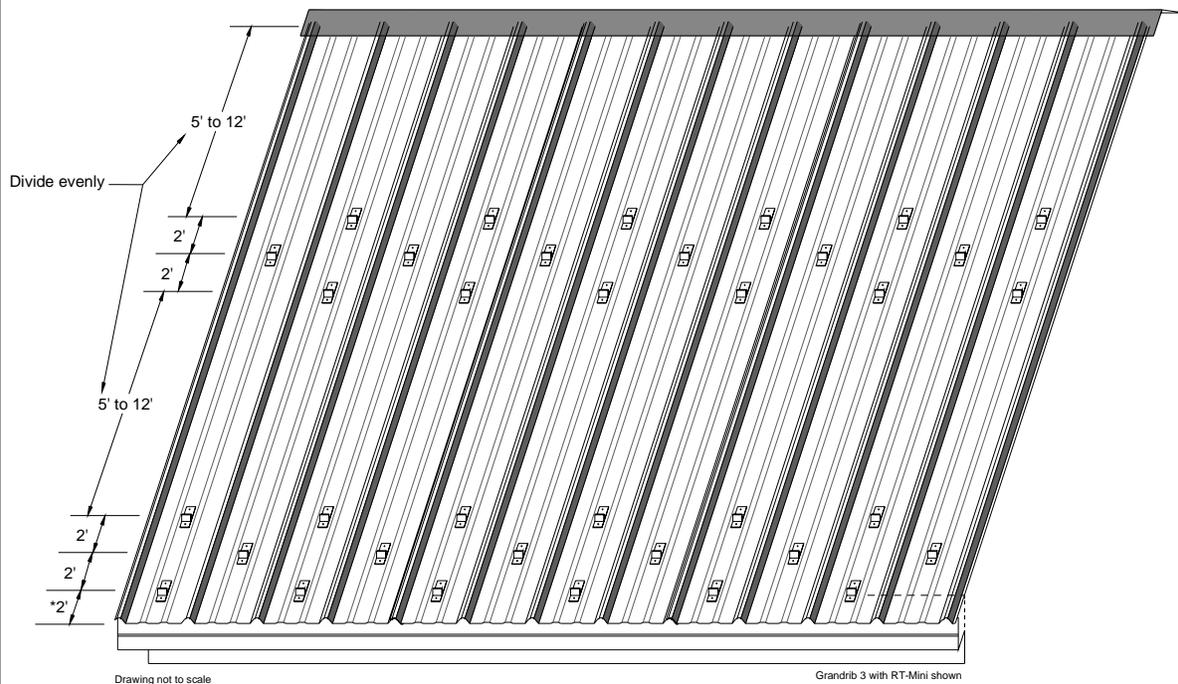
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SNOWGUARDS

Exposed fastener panels

For roof runs 20' - 34'



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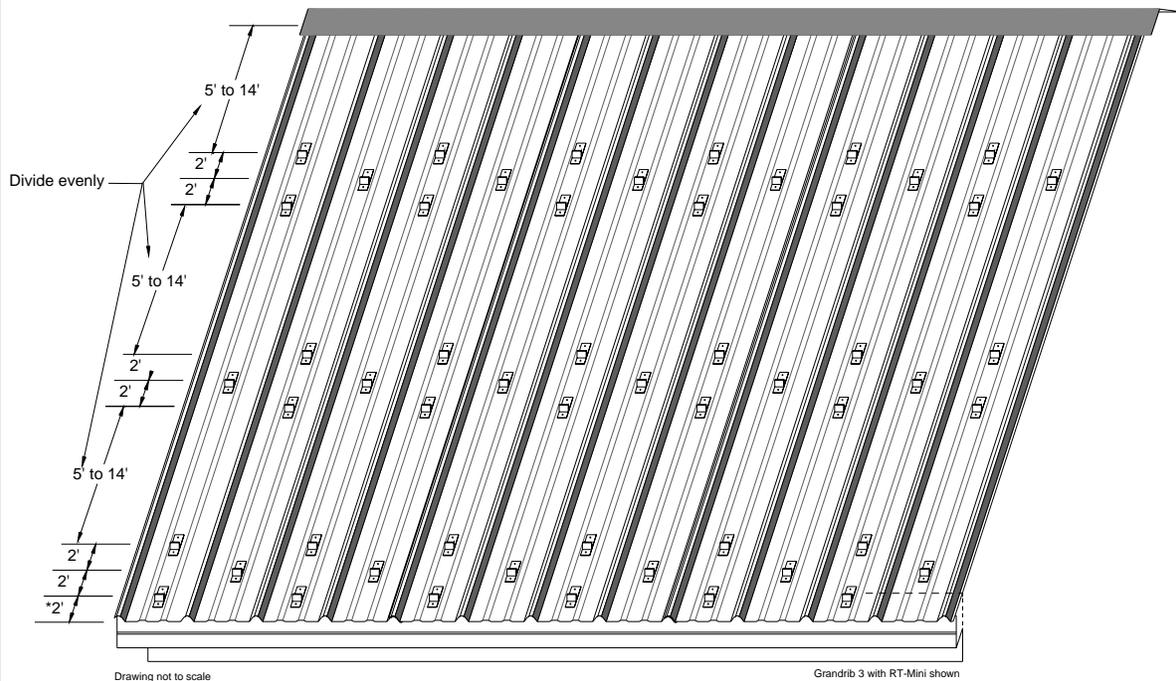
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SNOWGUARDS

Exposed fastener panels

For roof runs 35' - 56'



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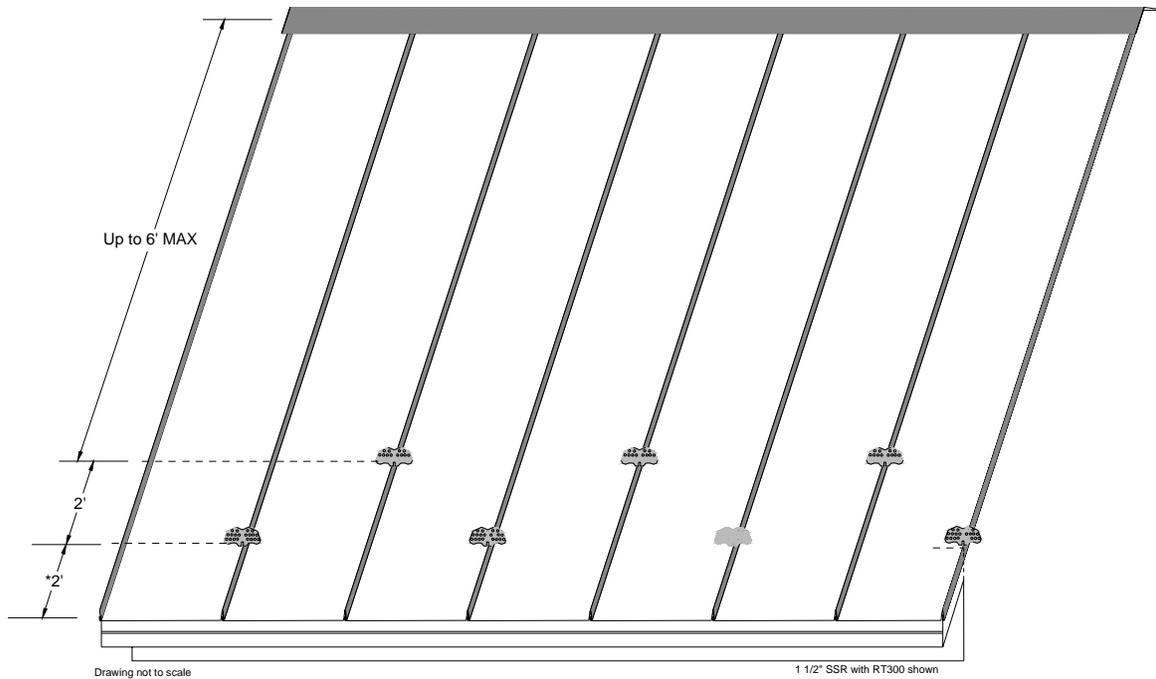
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SNOWGUARDS

Standing seam roofs w/ seam mounted guards
Panel runs under 10'



NOTES:

Panel anchor screws (under ridgecap) that fix the panels must be doubled to resist additional loads caused by the snowguards.

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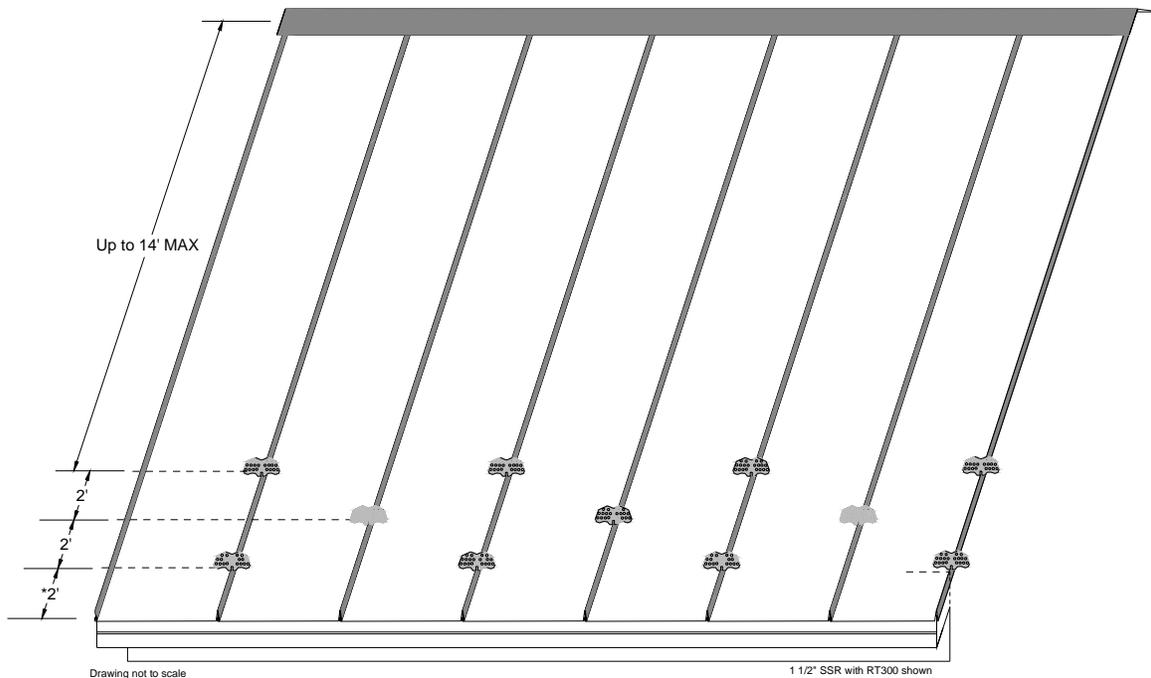
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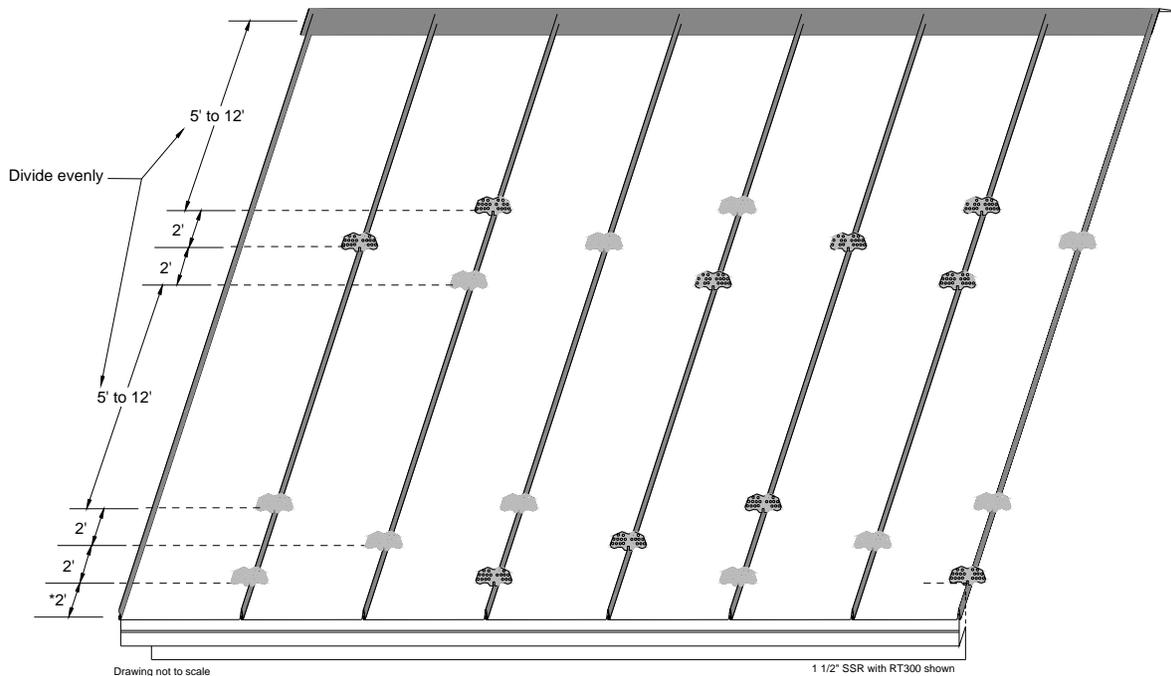
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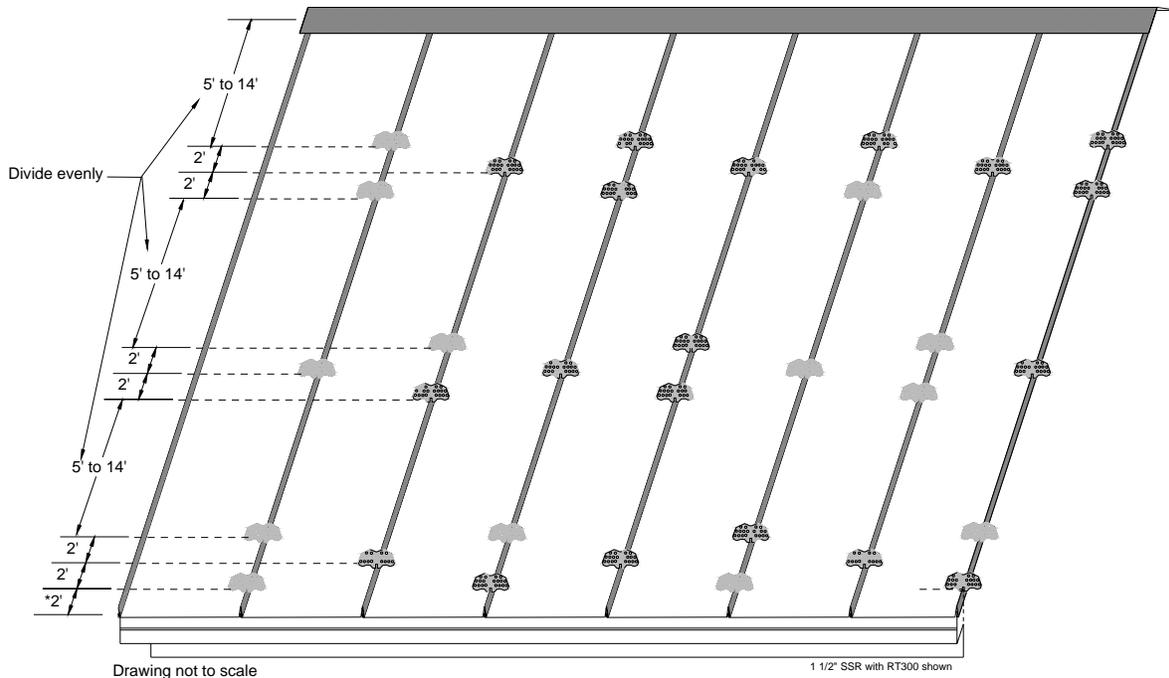
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