CEILING SYSTEMS

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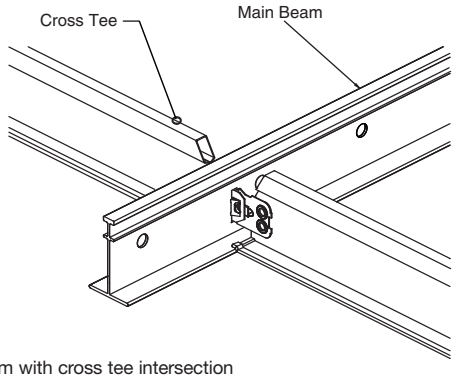
SERPENTINA™ 3-Dimensional Ceiling System

Installation Instructions

The Serpentina 3-Dimensional Ceiling System consists of a group of standard length curved and straight main beams, straight cross tees, curved and straight perimeter trims and 2′ x 2′, 2′ x 4′ and 2′ x 6′ flexible infill panels. Standard size components have been shipped to closely conform to the architects design, however FIELD MODIFICATION OF THESE STANDARD COMPONENTS MAY BE NECESSARY. Please read these instructions thoroughly before proceeding. In addition to these instructions, you may also have a Serpentina shop drawing which will give you the appropriate dimensions for your specific project. For additional installation help, call 1-800-840-8521.

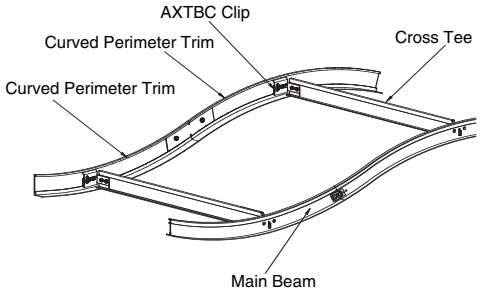
I. Components:

Main beams are extruded aluminum in nominal 4′, 6′, 8′ and 10′ lengths, straight or curved to form "hills" and "valleys". Main tees are routed 12″ on center and have clips on the ends that snap lock together. Mains are curved to form arcs that represent 7.5, 15, 22.5, 30, 37.5, 45, 52.5, 60, 75 or 90 degrees of a circle. **Cross tees** are standard 2′ Prelude XL tees.



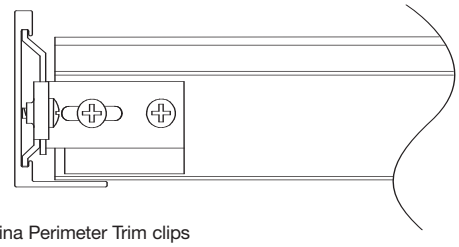
Main beam with cross tee intersection

Serpentina Perimeter Trim is straight or curved to the same arcs as the main beams. Perimeter trim runs parallel to the main beams at each end of the floating installation to provide a finished end condition.



Serpentina Perimeter Trim runs parallel to the main beams

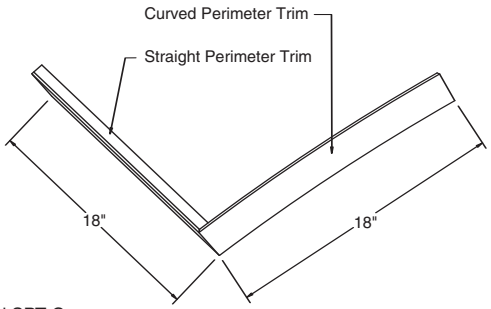
Serpentina Perimeter Trim Clips (AXTBC Clips) are used for the attachment of grid to the Serpentina trim.



Serpentina Perimeter Trim clips

AX Splice Plates are used to align and secure joints between sections of Serpentina Perimeter Trim. Each joint requires one splice plate. Plates slip fit into abutting pieces of perimeter trim and are secured by tightening screws.

Preformed SPT Corners consist of an 18″ length of premitered straight perimeter trim, an 18″ length of premitered curved perimeter trim and three splice plates. Corners are shipped in pairs, knocked down for field assembly and installation (curved perimeter trim and straight perimeter trim are field cut to accommodate corners).



Preformed SPT Corner

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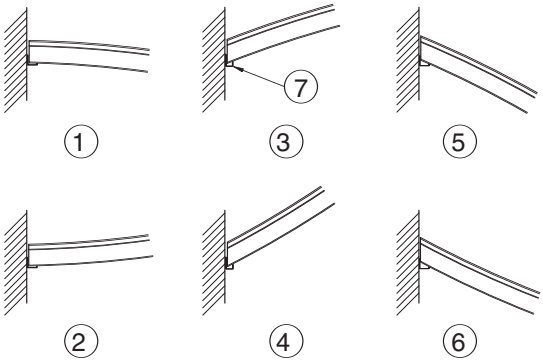
Serpentina "J" Moldings are aluminum wall angles that have a short vertical return on the outer edge. There are two "J" moldings available, one for shallow radii (SJMS) and one for tight radii (SJMT).

1. 90 degree Hill Intersection
2. 90 degree Valley Intersection
3. Obtuse Hill Intersection
4. Obtuse Valley Intersection
5. Acute Hill Intersection
6. Acute Valley Intersection
7. Serpentina Wall molding (SJMS or SJMT)



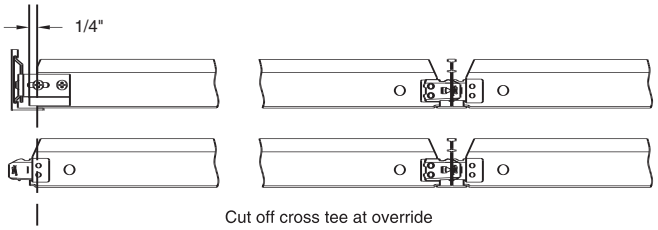
Infill Panels may be aluminum in 2′ x 2′, 2′ x 4′ and 2′ x 6′ lay-in, or 2′ x 4′ or 2′ x 6′ semi-concealed. Aluminum panels are available non-perforated or in ten perforation patterns.

II. INSTALLATION

- Begin your Serpentina installation by laying out a "Datum line" on the floor. Snap a line that represents either the structure to which the wires will be attached or a line parallel to that structure.
- Lay out main beams at the appropriate location under the "Datum" line. Do not connect main beams together on the floor. Connect main beams together after securing to hanger wires.
- Determine the location of hanger wires along the runs of main beams. Hanger wires should be spaced no more than four lineal feet of main apart, and there should be at least two hanger wires on each section of main beam.
- Plumb these hanger wire locations to the Datum line. You have now established both the spacing between hanger wires and the change in length for each location relative to the Datum line. Notice that the horizontal spacing between hanger wires is usually not constant. Map out these locations now and work carefully to maintain the correct locations so that your wires will be plumb.

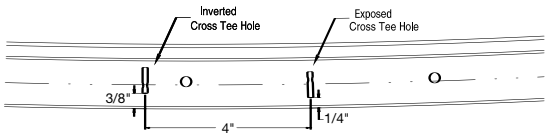
NOTE: Before beginning the installation, be aware that it may be possible to see the backside of your curved ceiling system. Care should be taken when suspending the ceiling assembly. 12 gauge hanger wire (or, to enhance the appearance: aircraft cable, black annealed wire or stainless steel wire of equivalent strength as approved by the design team) should be installed straight and plumb, at uniform intervals, and wire wraps should be neat and tight. Make sure hanger wires are free from kinks.

- Attach wall trims as required. The Serpentina "J" trims are used on walls perpendicular to the main beams. Serpentina Perimeter Trim is used to finish installations that do not meet walls, and can be applied either parallel or perpendicular to the mains. Attachment clips are used to fasten the perimeter trim to the grid members. When attached to cross tees, additional wires must be added to the tees to provide support for the perimeter trim.
- Where the straight perimeter trim intersects with curved perimeter trim, install a factory mitered outside corner. Using an 18" length of the curved and straight materials as templates, field cut the perimeter trims and install the factory mitered outside corners with the splice plates provided.
- Serpentina Perimeter Trim is not considered to be a structural component of the system. Although it is unavoidable that some weight will be supported by this trim, it is intended that the suspension system provide the primary support for the ceiling system. Perimeter trim must be supported by means of hanger wires attached to the cross tees that intersect the trim elements. These hanger wires must be installed on every other tee for 2′ x 2′ systems, and on every tee when they are spaced 4′ apart. Hanger wires must be no more than 8″ from the perimeter trim and no closer to the main beam than 1/2 of the length of the tee to which they are attached. Additionally, each section of trim shall be supported by at least two hanger wires. When the grid layout does not provide two cross tee connection points along the length of a trim section, additional hanger wires must be attached by means of the Axiom hanging clip. (AX2HGC)



Cut off cross tee at override
Position end of cut tee 1/4" from bottom corner of AXTBC

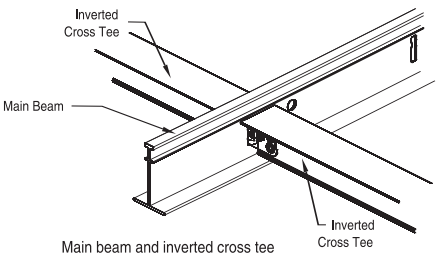
- Main tees are always spaced 2 feet apart.
- Install cross tees as required to complete the installation. Note that main beam spacing for the 2′ x 6′ semi-concealed option is by Prelude XL7128 cross tees installed upside down in specially located inverted rout holes. This low web tee will clear the backside of the panel when inverted.



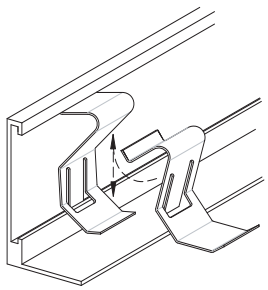
Rout hole inverted cross tee.

- Install panels and hold down clips. For best appearance, a hold down clip should be positioned as close as possible to the intersection of the main beam and cross tee, at each corner of the panel. (Valleys do not need clips at the corners.)

Serpentina perforated ceiling panels have an edge border to help in the alignment of the hole pattern from panel to panel. For the larger hole sizes (R250, R375, S250 and S375) the installer should begin the installation with a small number of panels, and inspect to ensure the perforations are in alignment. It may be necessary to shift a panel 90 degrees to align the perforations. Since the panels are slightly less than 24″ wide, care should be taken to position each panel into the gridwork in a consistent manner to make sure holes are aligned.



Main beam and inverted cross tee connection detail



Serpentina Perimeter Hold Down Clip (AX-SPT-HDC)

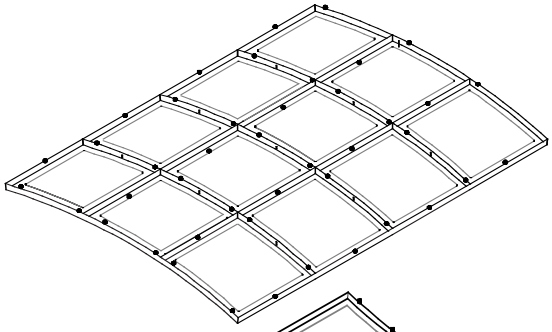
Metal Panel Hold-down Clips

Metal panel hold-down clips are used to secure the cut edges of metal ceilings at the Serpentina Perimeter Trim. Insert one clip for every foot of perimeter, or as needed to maintain contact between the panel edge and the flange of the trim.

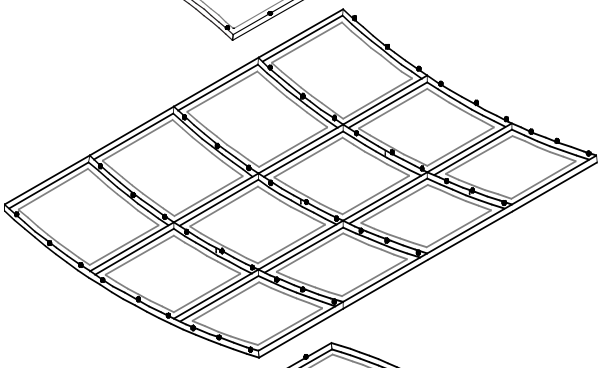
Insert the top of the clip into the channel first. Press up to compress the clip and insert the bottom leg into the channel.

Hold Down Clip Placement For Arcs 4375, 4525, 445, 460, 490, 690, & 890

Hills require 3 clips per panel placed as shown in the drawing to right.

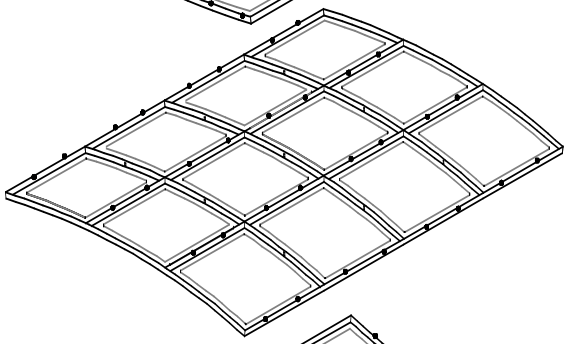


Valleys require 3 clips per panel as shown in the drawing to right.

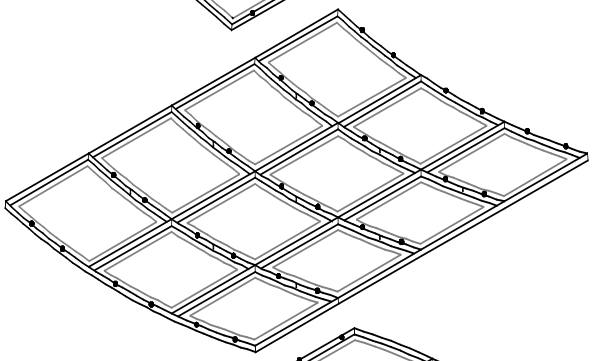


Hold Down Clip Placement For Arcs 4225, 430, 6375, 645, 6525, 660, 8525, 860, 10525, 1060 & 1090

Hills require 2 clips per panel placed as shown in the drawing to the right.

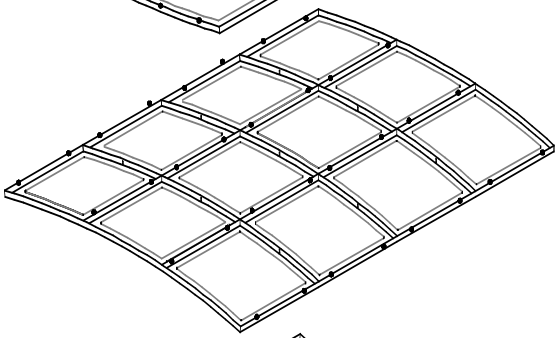


Valleys require 2 clips per panel as shown in the drawing to the right.



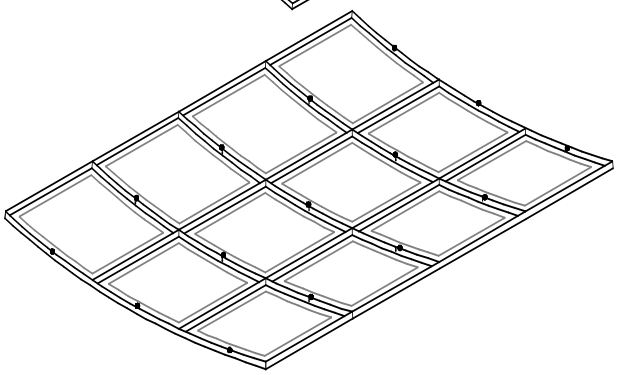
Hold Down Clip Placement For Arcs 8375, 845, 6225, 630, 10375 & 1045

Hills require 2 clips per panel as shown in the drawing to the right



Valleys require 1 clip per panel placed as shown in the drawing to the right.

4075, 415, 6075, 615, 8075, 815, 8225, 830, 10075, 1015, 10225 & 1030 do not require the use of hold down clips.



III. ASSEMBLY DRAWINGS:

For your reference, pages 5 through 12 contain assembly drawings giving a general overview of typical Serpentina configurations including Waves, Single Section Hills and Valleys, Multiple Section Hills and Valleys and Split Vaults.

Assembly drawings include layouts where full panels are desired at each end of the Serpentina curved ceiling layout, and where

Serpentina Waves

Waves can be installed with full panels at the beginning and end of the wave.

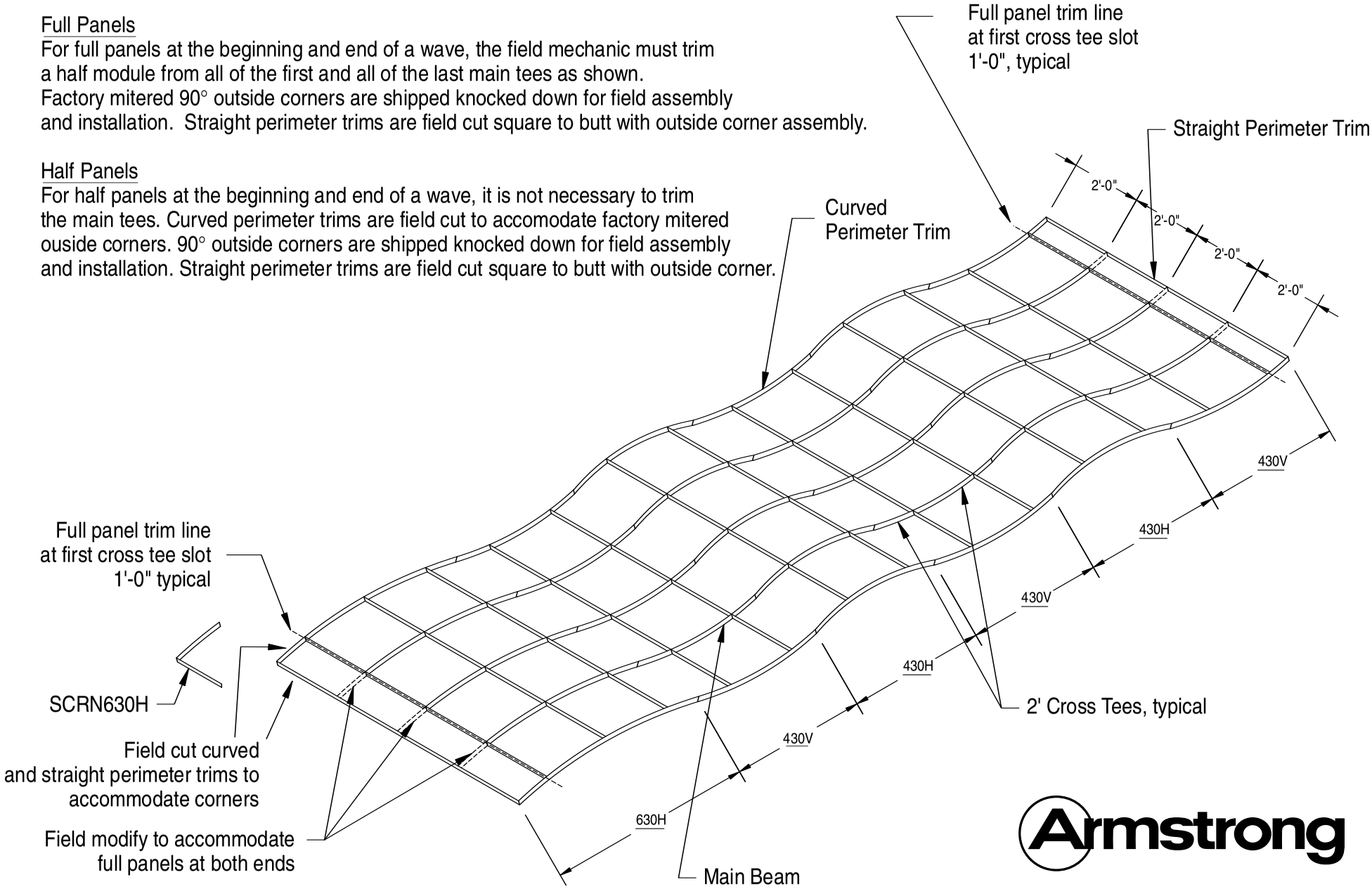
NOTE: Serpentina Main Beams are punched 12" O.C.

Full Panels

For full panels at the beginning and end of a wave, the field mechanic must trim a half module from all of the first and all of the last main tees as shown. Factory mitered 90° outside corners are shipped knocked down for field assembly and installation. Straight perimeter trims are field cut square to butt with outside corner assembly.

Half Panels

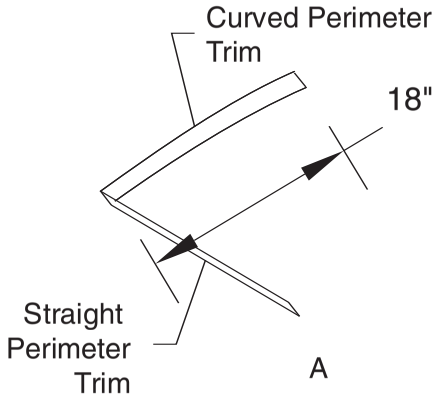
For half panels at the beginning and end of a wave, it is not necessary to trim the main tees. Curved perimeter trims are field cut to accomodate factory mitered ouside corners. 90° outside corners are shipped knocked down for field assembly and installation. Straight perimeter trims are field cut square to butt with outside corner.

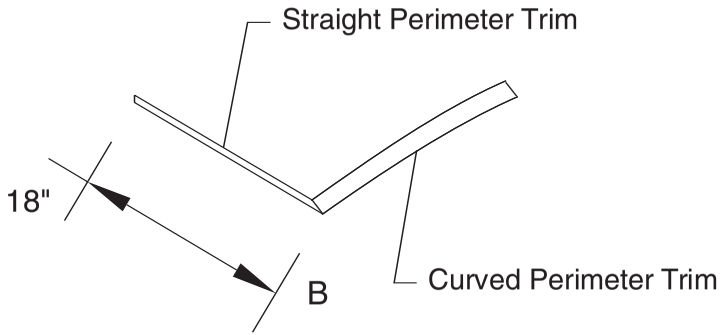


Serpentina factory mitered outside corners

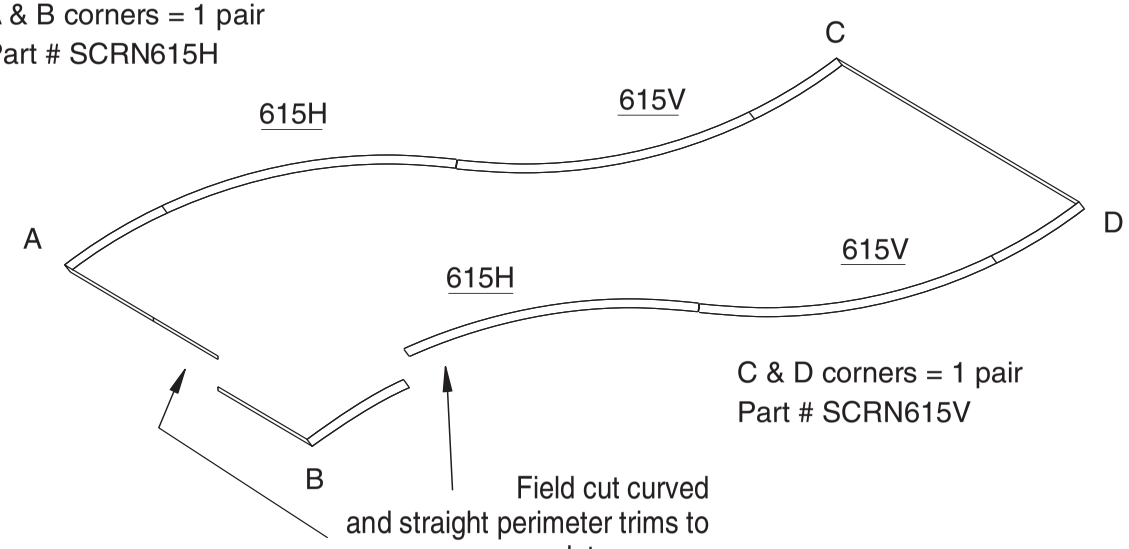
Each outside corner includes:
One (1) 18" length of pre-mitered straight trim
One (1) 18" length of pre-mitered curved trim
Three (3) AX Splice Plates

NOTE: Factory pre-mitered outside corners are shipped in pairs, unassembled.
All components for each corner are packaged together.





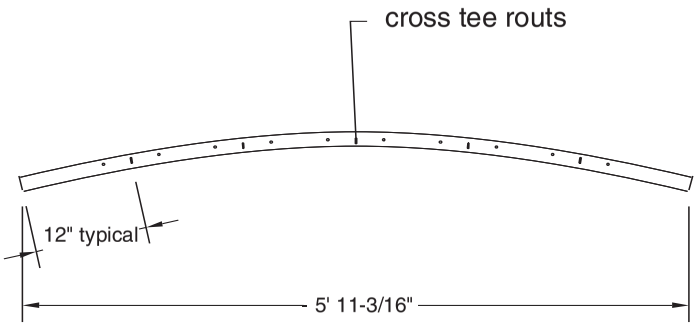
A & B corners = 1 pair
Part # SCRN615H

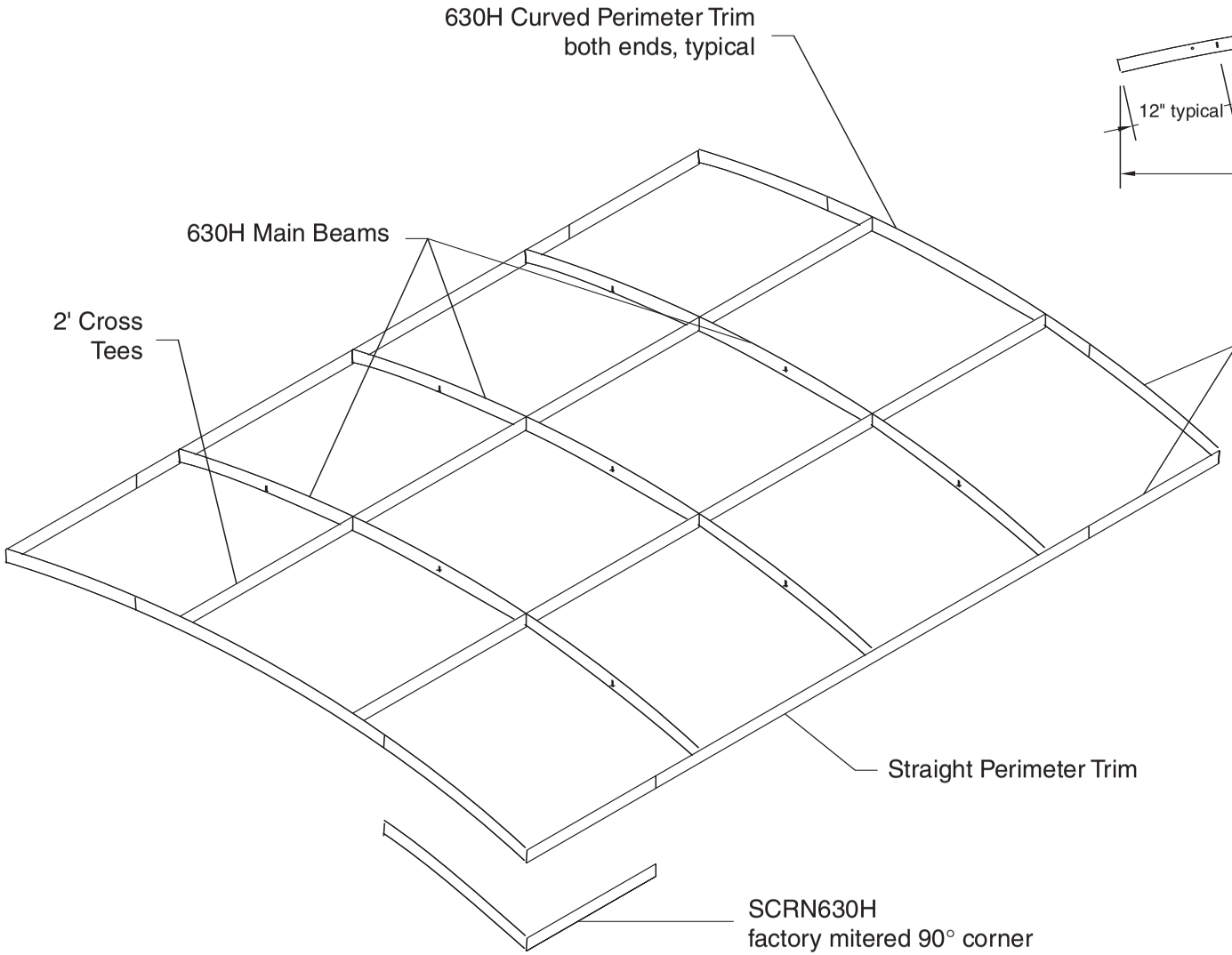


C & D corners = 1 pair
Part # SCRN615V

Single Section hills & valleys

Single Section hills & valleys can be installed with full panels at each end, or half panels at each end.





Field cut Curved Perimeter Trim and Straight Perimeter Trim to accommodate factory mitered outside corners. 90° outside corners are shipped knocked down for field assembly and installation.

Typical hill layout with full 2' x 2' panels at ends.
6' hill x 8' width

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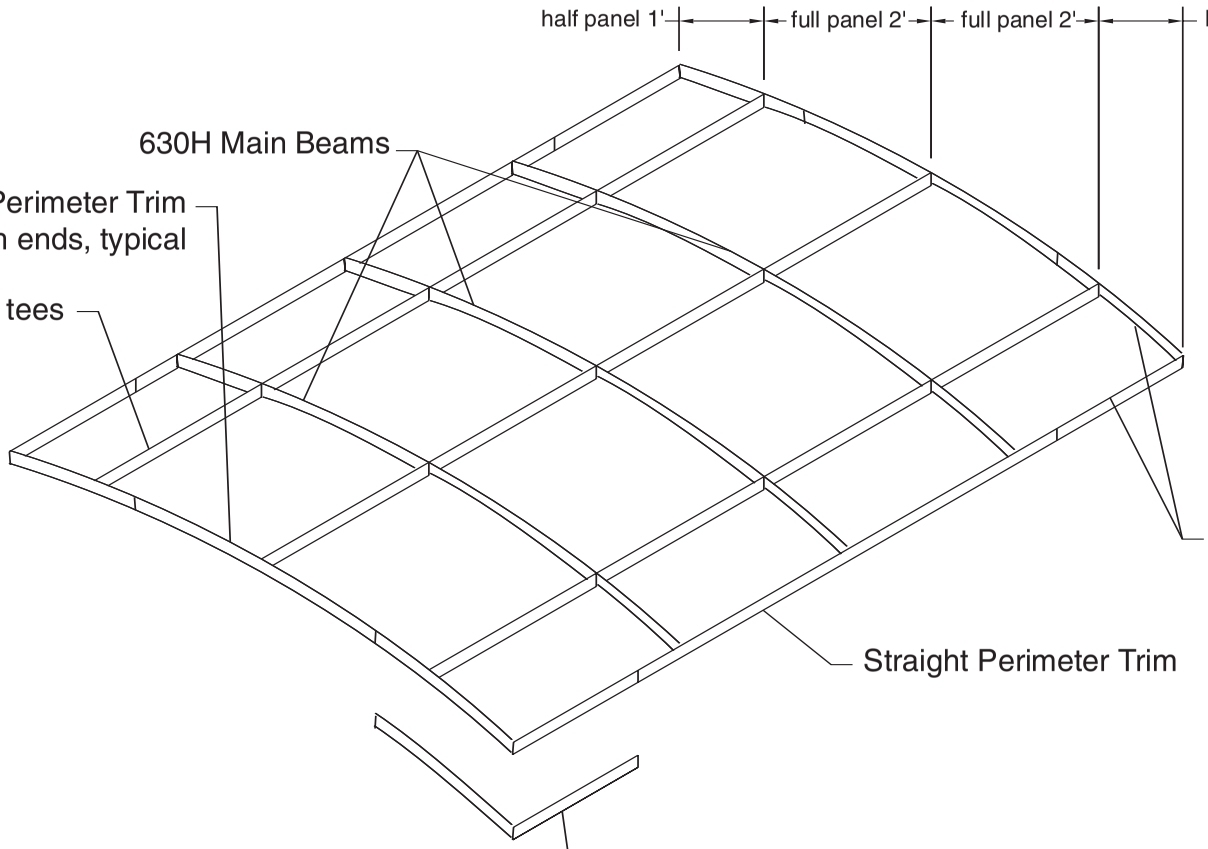
Single section hills & valleys

Single section hills & valleys can be installed with full panels at each end, or half panels at each end.



Typical hill layout with half 2' x 2' panels at ends.
6' hill x 8' width

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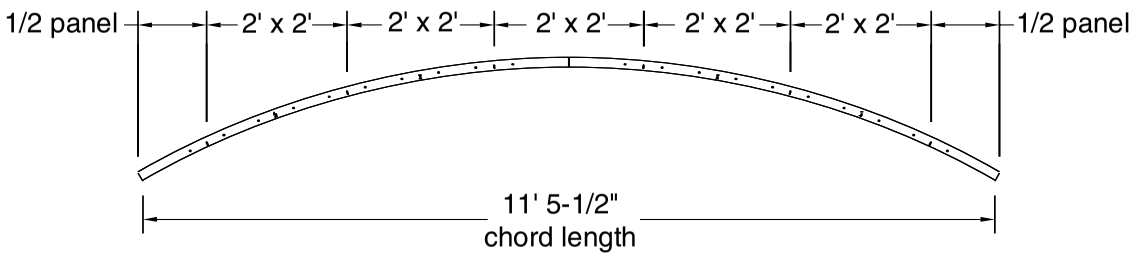
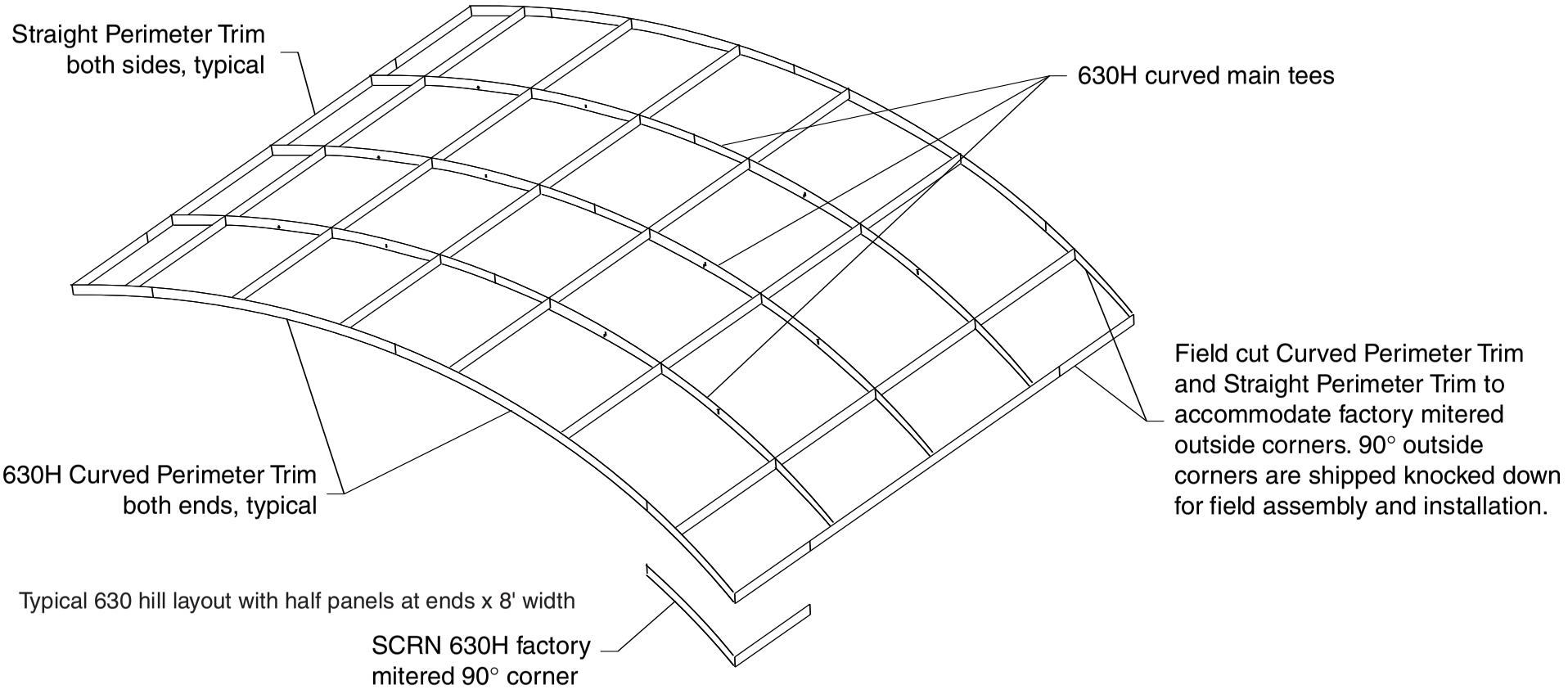
Multiple section hills & valleys

Multiple section hills & valleys can be installed with full panels at each end, or half panels at each end.

Note: Serpentina Main Beams are punched 12" O.C.





Typical 630 hill layout with half panels at ends x 8' width

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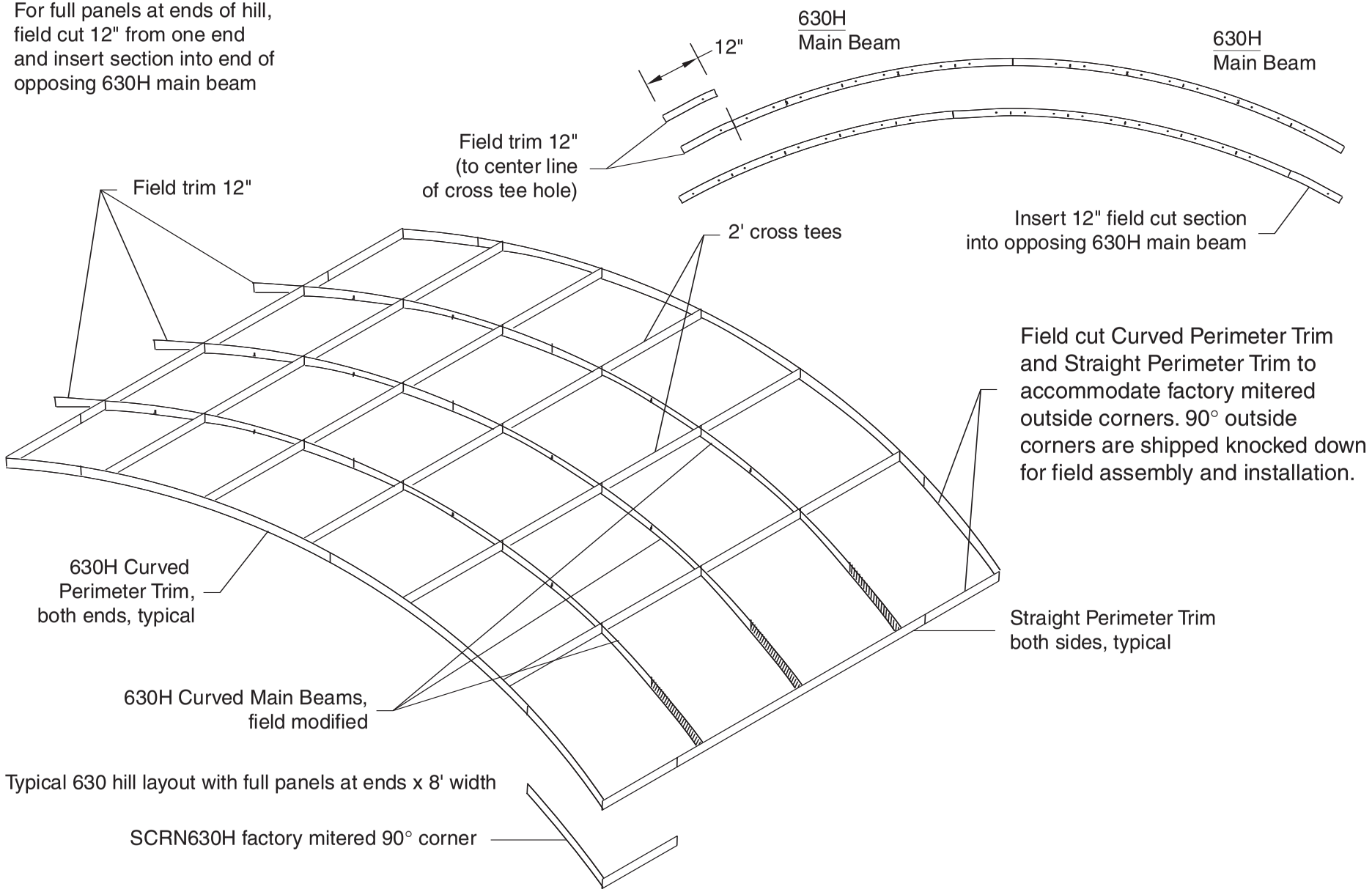
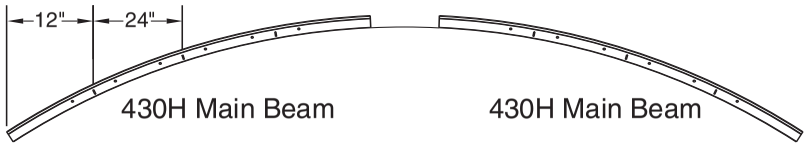
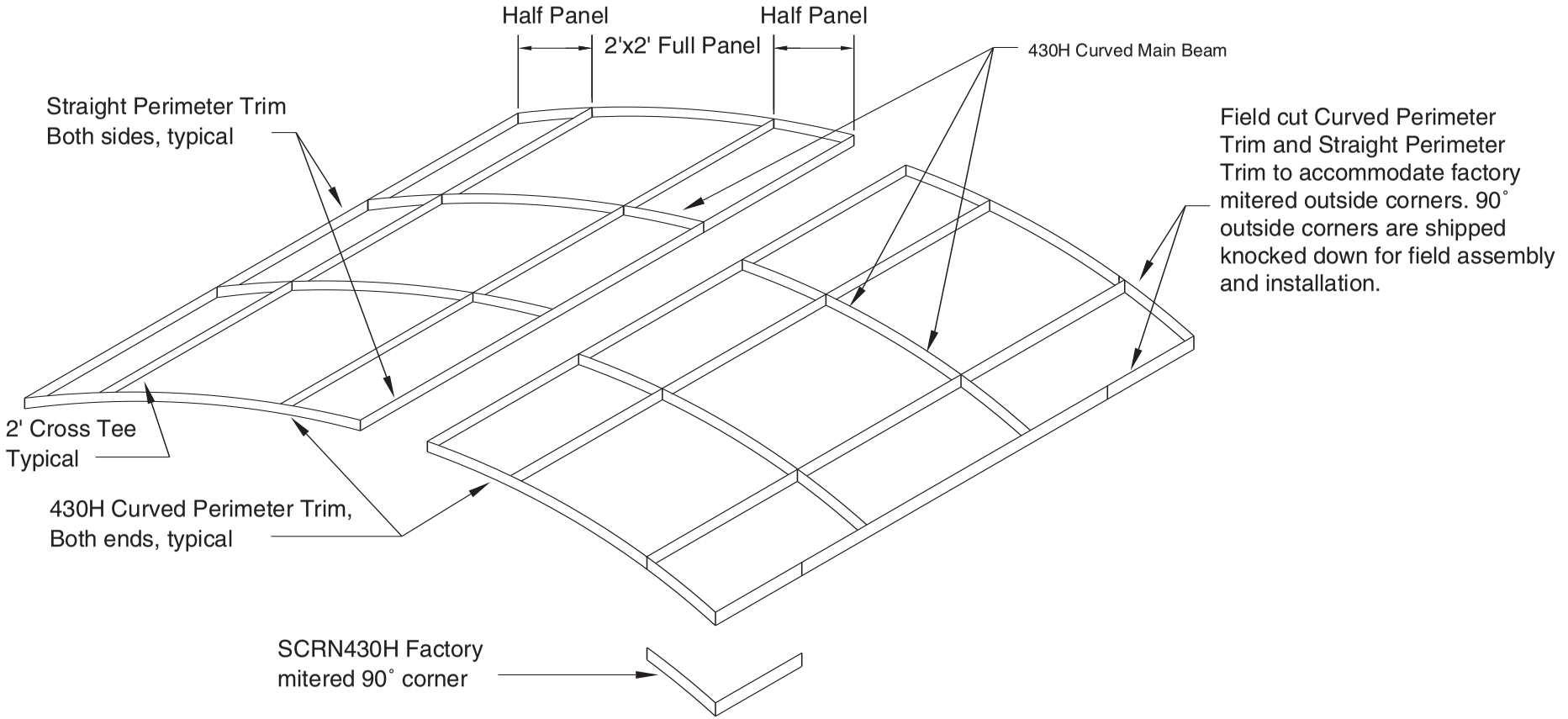
Mutiple section hills & valleys
For full panels at ends of hill, field cut 12" from one end and insert section into end of opposing 630H main beam



Split Vaults

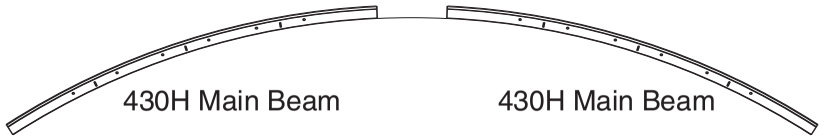
Split vaults can be constructed using single or multiple sections of Serpentina, and with full panels or half panels at each end of the vault. (Note: Serpentina main beams are punched 12" o.c.)

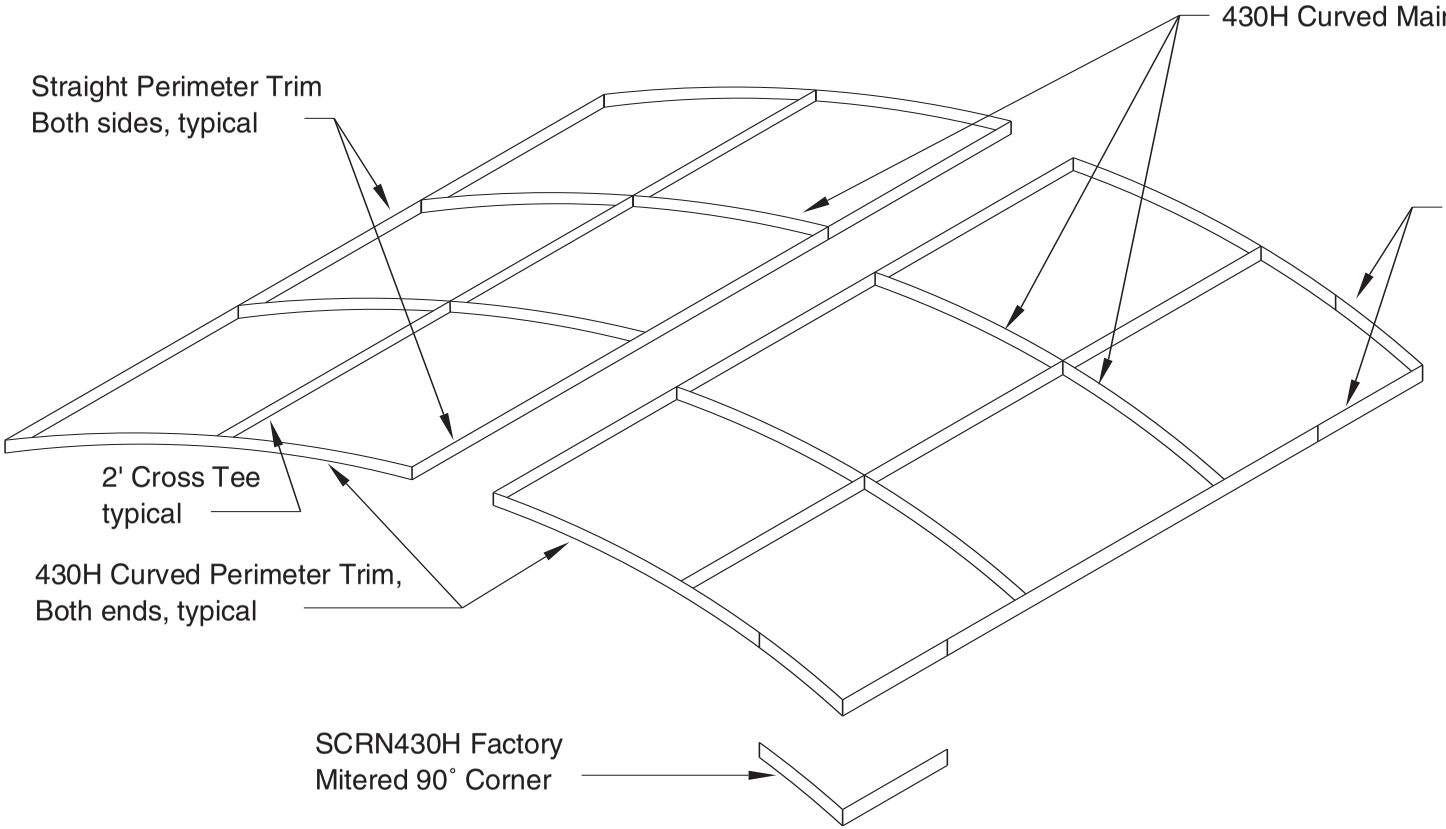




Typical 430H split vault layout with half 2' x2' panels at ends. Two 4' hills x 6' width.

Split Vaults
Installation with full panels at each end





MORE INFORMATION

For more information, or for an Armstrong representative, call 1-877-ARMSTRONG.

For complete technical information, detail drawings, CAD design assistance, installation information and many other technical services, call TechLine™ services at 1-877-ARMSTRONG or FAX 1-800-572-TECH.

For the latest product selection and specification data, visit www.armstrong.com

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