

General

The following guidelines provide basic assembly and installation instructions for 'MPH' extruded aluminum penthouses mounting to rigid curb conditions.

1. For additional details, refer to the product drawing package posted at www.csairproducts.com as well as any job-specific submittal drawings when provided.
2. Carefully lift louver sections by the frames using multiple lifting points as necessary to avoid distortion, racking, or other damage. **Do not apply excessive force to a single point, and NEVER LIFT UNITS BY LOUVER BLADES.** Take necessary precautions to prevent marring the louver finish.
3. All gaskets, caulk and anchors to curb are supplied by others.

Preparation

Louvers and Hardware

1. Locate all crates, boxes, cartons, etc.
2. Remove louvers and other items from packaging, inspect for damage, confirm quantities and sizes with packing list, and organize parts in order of installation. To verify installation hardware quantities, refer to Table 1. Installation hardware will typically be shipped in a separate box.
3. Notify your C & S representative immediately of any shortages or shipping damage.

Sill Flashing (if applicable)

1. Locate all sill flashing (by others or optional by C & S).
2. Confirm that the top of the condition/curb and the underside of the flashing are clean and free of all debris.
3. If quantity of (4) pieces of sill flashing is included, cut sill flashing members into two halves for a total of (8) pieces. For wider openings, flashing may already come in (8) pieces. These pieces are cut long in the factory so they can overlap and can easily be adjusted in the field. The flashing should extend behind all stiffeners and sit against the outside edge of the curb. See Figure 1.1.
4. Apply caulk to the top of the condition/curb and firmly set the sill flashing in the caulk. See Figure 1.1.
 - a. Caulk at all overlapping joints and firmly set. See Figure 1.2.
 - b. Corner flashing pieces will include extra length on each end which must be notched and manually bent into place to seal off the corners. Carefully bend up the tabs and thoroughly caulk the corner seams. See Figure 1.3.

Figure 1.1 Sill Flashing Vertical Section

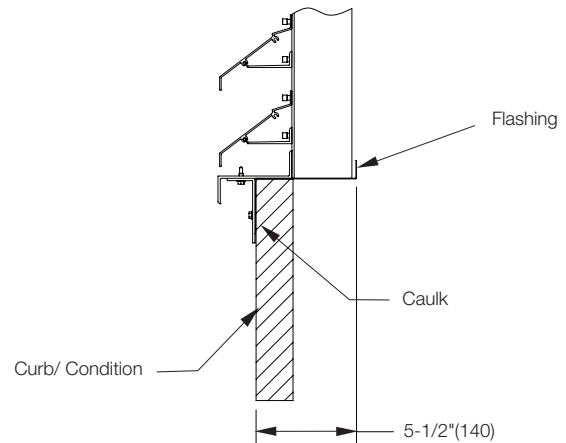


Figure 1.2 Sill Flashing Assembly

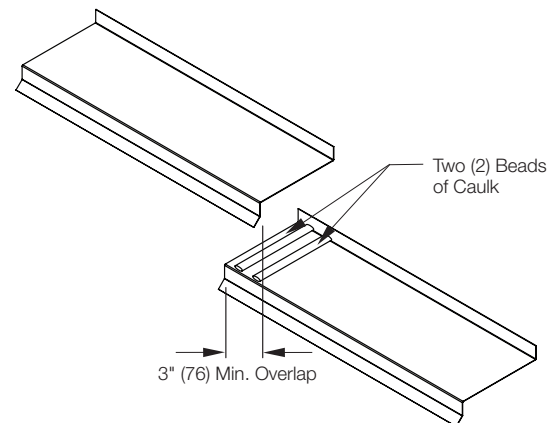
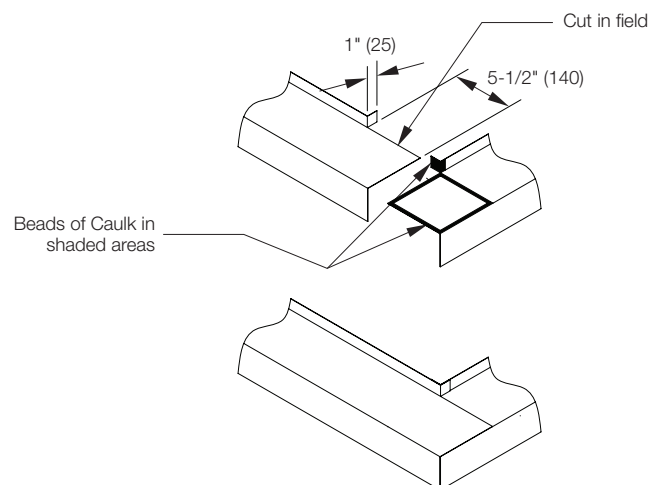


Figure 1.3 Sill Flashing Corners

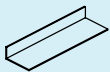
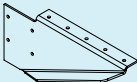


Installation Details

'MPH' MITERED PENTHOUSES

Installation Instructions

Table 1: Installation Hardware

Part	Description		
A-1	Roof Beam		Included as needed
A-2	Install Angle (3-1/2" x 1-1/2" x 1/8" x 6063-T6 Aluminum)		Included
P-1	Connector Plate		Included as needed
P-2	Support Brace		Included as needed
F-1	#12-14 x 1" Hex-Head Self-Drilling Machine Screw		Included
F-2	Anchor to Curb/Condition		By others

Penthouse Installation

Smaller penthouses, with both 'A' and 'B' throat dimensions equal to or less than 48" (1219) are pre-assembled prior to shipping.

Penthouses with 'A' or 'B' throat dimensions greater than 60" (1524) will have mid-stiffeners on corresponding louver sections. These mid-stiffeners will be later fastened to beams which will connect two opposite sides of the penthouse together. See Figure 2.1 and step 1c.

1. If penthouse is shipped pre-assembled, skip section 1 and move to section 2 of penthouse installation.

Assembly

- a. Make sure individual sides are square before assembling.
- b. Fit up outside Zee stiffeners together (left over right) and use #12 x 3/4" TEK (F-1) screws spaced 12" apart max. Be sure that blade edges are making contact before fastening. See Figure 2.1
- c. If mid-stiffeners are present, roof beams (A-1) will be used to connect the widest sides together. Fasten each roof beam to the mid-span stiffeners across from each other using a flat connector plate (P-1). Use #12 x 3/4" TEK (F-1) screws to fasten the connector plate to the back of each stiffener then the web of the roof beam. See Figure 2.1
- d. Repeat step c for each roof beam.
- e. If support braces (P-2) are shipped, install underneath each roof beam. Both sides of the roof beam will need a support brace. Connect using #12 x 3/4" TEK (F-1) screws in pre-drilled holes.

2. Installation to curb

- a. **Using a lift bar**, lift penthouse onto curb by attaching lifting lugs to either the holes at the top of the Zee stiffeners or roof beams. Set the penthouse on top of the curb.
- b. Center the penthouse on the curb. Set the inside edge of the sills (or bottom Zee) flush with the inside of the curb. The outer edge of the sills should be a minimum of 2" away from the curb.
- c. Place the installation angle (A-2) against the outside of the curb with the 1.5" leg against the penthouse sill and the 3.5" leg against the curb. See Figure 3.1.

If the curb does not have enough clearance for installation angles, then skip to step 2f.

- d. Anchor the installation angles to the curb (anchors by others).
- e. From under underneath the sill, attach the top leg of the installation angle to the sill using #12 x 3/4" TEK (F-1) fasteners spaced a maximum of 12" on center apart. See Figure 3.1
- f. If the curb does not allow enough space for installation angles, sill may be directly anchored to curb (anchors by others). Shim any gap greater than 1/16" (1.6).

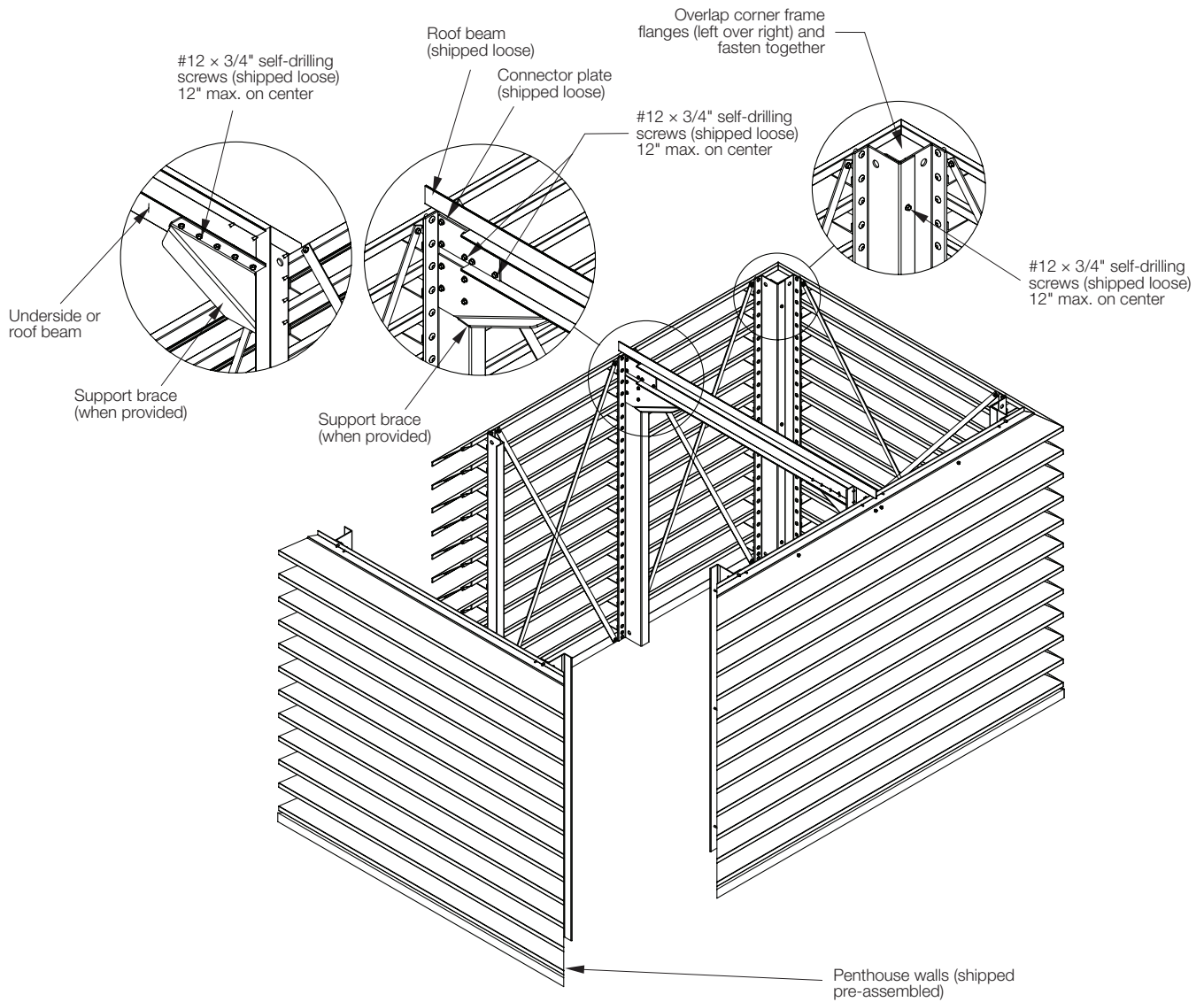
3. Install roof pans

- a. Place roof pan type 'A' on top of penthouse with upward flange against top of roof beam. Roof pan type 'A' does not have a flange that will overlap the top of the roof beam. See Figures 4.1 and 4.2.
- b. Fasten panel 'A' down along the outside edges to the top blades of the penthouse. Screw locations are determined by pre-drilled holes in panel. **Do not fasten panel to the roof beam until adjacent panels have been placed.**
- c. If the penthouse has more than one roof beam, place a mid-roof panel next to roof pan 'A' with the overlapping flange going over the beam and pan 'A'. See Figure 4.2.
- d. Fasten the mid-roof panel to the blades first, following the pre-drilled holes in the panel.
- e. Use #12 x 3/4" TEK screws (F-1) to fasten the overlapping flange, roof beam, and roof pan 'A' standing seam. Screws should be spaced a maximum of 16" on center.
- f. Repeat steps 3c through 3e for all other pans.

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Figure 2.1: Penthouse Assembly (Walls and Roof Beams)

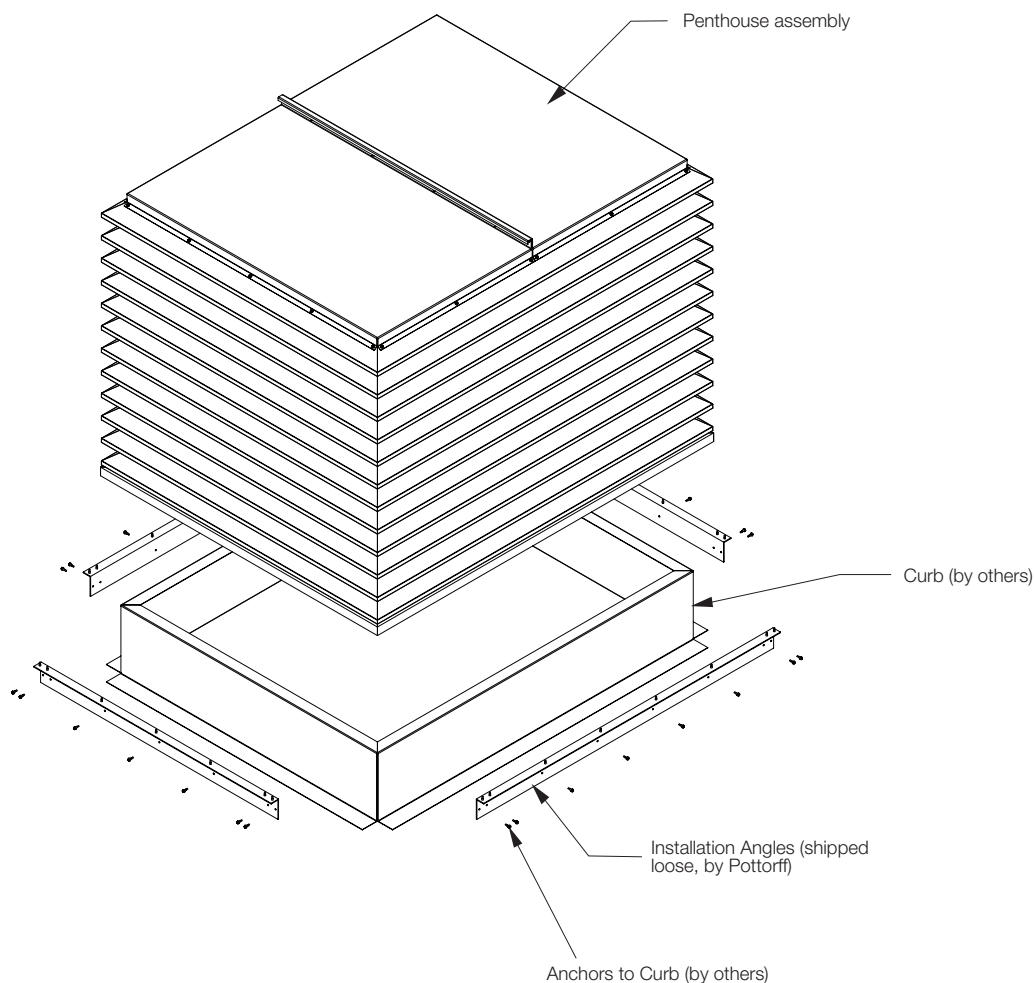


Installation Details

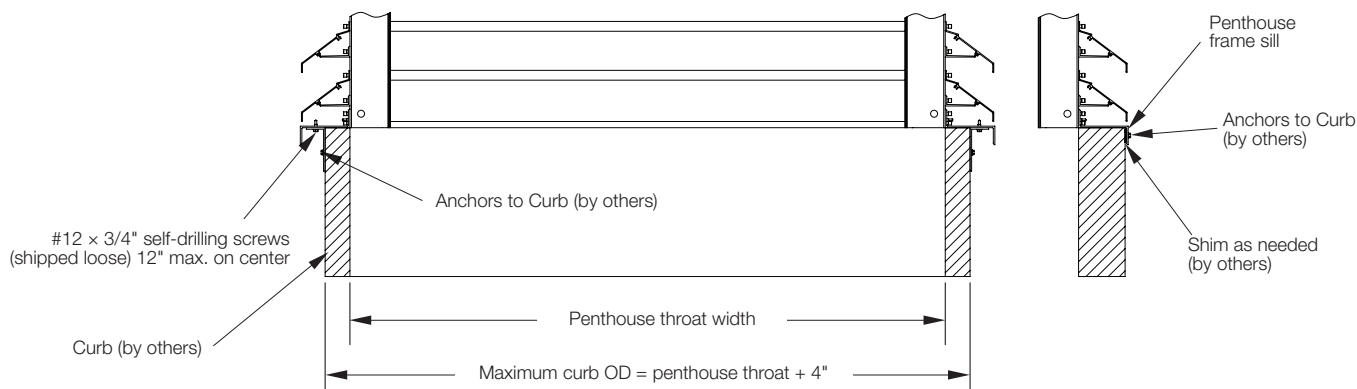
'MPH' MITERED PENTHOUSES

Installation Instructions

Figure 3.1: Penthouse Installation to Curb



Section Detail



Installation Details

'MPH' MITERED PENTHOUSES

Installation Instructions

Figure 4.1: Penthouse Assembly (Roof Pans)

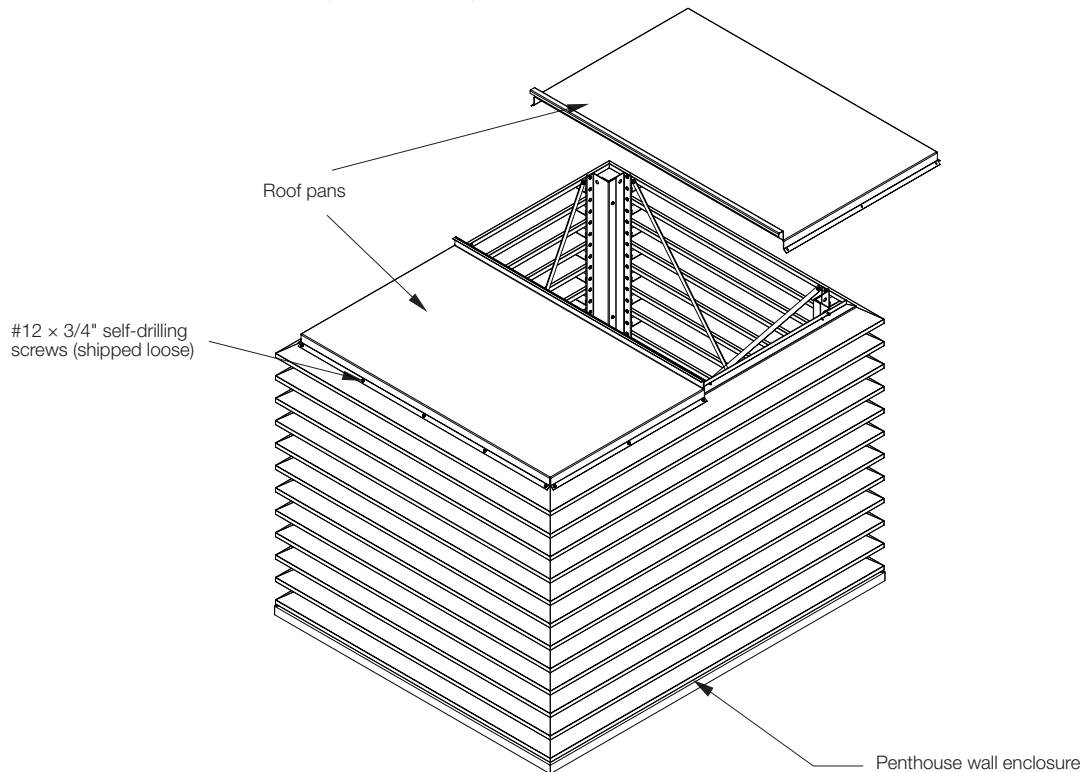


Figure 4.1: Penthouse Assembly (Roof Pans)

