

# METALWORKS™ RH215 Faceted Custom Hook-on Panels

## Assembly and Installation Instructions

### 1. GENERAL

#### 1.1 Product Description

MetalWorks RH215 Faceted Custom Hook-on panel system is a downward accessible, custom metal ceiling available in a range of sizes. Flat panels are designed to install on the Curved 1-Bar suspension system. All panels can be removed and re-installed with minimal access to the plenum.

Two sides (typically the short sides) support the installed panels. Each corner will have a hook detail that allows the panel to engage on the 1-Bar suspension element. The adjacent sides have vertical returns; the panels are self-supporting without sag.

#### Gaskets

A foam "Gasket" is optional on the RH215 panel. The gasket (standard width 3mm - 1/8") allows panels to be installed and removed easily, provides a tolerance factor and creates a uniform reveal joint. Gaskets will be indicated on the shop drawings. Field applied gasket should be installed a minimum of 1/8" above the panel face.

#### Perforations

Panels may be perforated or non-perforated. A factory-installed acoustical mat is typically provided for sound absorption. Add the optional field installed acoustical infill for increased sound absorption if specified.

#### Surface Finish

MetalWorks panels are powder coated after forming (post coat). The surface of these panels is impact resistant, cleanable and non-directional.

#### 1.2 Storage and Handling

The ceiling panels shall be stored in a dry interior location and shall remain in cartons prior to installation to avoid damage. The cartons shall be stored in accordance with the instructions on the carton. Proper care should be taken when handling to avoid damage or soiling.

#### 1.3 Site Conditions

Building areas to receive ceilings shall be free of construction dust and debris. Panels should only be installed in closed and acclimatized buildings. The systems cannot be used in exterior applications, where standing water is present or where moisture will come in direct contact with the ceiling.

#### 1.4 Plenum

Since panels are installed from below, MetalWorks RH215 Hook-on panels require minimal clearance above the suspension system.

**NOTE:** Light fixtures and air handling systems require more space and will usually determine the minimum plenum height for the installation.

### 2. SUSPENSION SYSTEM

#### 2.1 General

The suspension system shall be Armstrong "U" profile (BPM330001) and Curved 1-Bar (BPM311400) suspension elements. The suspension system shall be properly installed and leveled using not less than 12-gauge galvanized steel wire.

#### 2.2 Suspension Grid – U-profile

The U profiles shall be spaced 48" O.C. with a maximum distance of 12" from the outside edge of the module. The top of the U-profile is 3-3/4" above the finished ceiling height. Refer to the shop drawing for height to install the U-profile for the custom curved 1-Bar. The 1-Bar shall intersect the U profile at 90° at every module (the module is dictated by the length of the panel – consult the shop drawings). The 1-Bar is connected to the U profile with a 1-Bar hanger (BPM300307). (See Drawing 1 on page 4)

#### 2.3 Suspension Grid – 1-Bar

The aluminum 1-Bar (BPM311400) grid element is curved to the radius as indicated on the shop drawing. Position the 1-Bar hanger on the U-profile and use a plug-in clip (BPM300120) to secure it at the desired module. Insert the top horizontal flange of the 1-Bar into the 1-Bar hanger. Bend both tabs on the 1-Bar hanger down to prevent the hanger from disengaging. Repeat this process until all 1-Bar hangers are secured in place. Use the 1-Bar splice (BPM3003430) to connect adjoining sections of 1-Bar.

(See Drawings 1 & 2 on pages 4 & 5)

## 2.4 Suspension Grid Alignment

RH215 Faceted Custom ceiling system is designed with full panel installation and does not require field cutting perimeter panels. System can be a floating cloud or terminate within 1" of the perimeter wall. Refer to shop drawings for perimeter details.

U-profiles and 1-Bars require bracing to structure to maintain system alignment, squareness and integrity. Counter splay wires or rigid bracing can be used to minimize bracing from line of sight.

Use the Seismic Anchor Clamp (BP6105) to secure the 1-Bar to the 1-Bar hanger when required to maintain system alignment.

*(See Drawings 1 & 2 on pages 4 & 5)*

## 3. PANEL INSTALLATION & REMOVAL

### 3.1 General

MetalWorks Hook-on ceiling panels are easily installed and removed from below the suspension system allowing easy downward access to the plenum.

#### Panel Orientation

Before beginning panel installation refer to the shop drawing for correct panel size and orientation.

### 3.2 Installing Panels

Note that panel ends are the same detail. Either end can be installed or removed first. Install all full sized panels as shown on the shop drawings.

Optional foam gasket must be applied before panel installation.

**Step 1:** Insert the corner hooks of one end onto the 1-Bar as far as possible.

**Step 2:** Raise the opposite end of the panel up until it touches the bottom of the next 1-Bar.

**Step 3:** Gently slide the panel back until the corner hooks engage over the 1-Bar. The opposite corner hooks will engage the 1-Bar as the panel is lowered into place.

*(See Drawing 3 on page 6)*

Repeat process until first row of panels is in place. Subsequent rows of panels are installed similarly.

It is not necessary to use any specific sequence, as all panels are fully accessible with or without the other panels installed.

### 3.3 Panel Alignment

The use of a laser or string line is recommended to establish straight panel alignment. Panels may be slid along the 1-Bar to adjust alignment as necessary. Use a Seismic Anchor Clamp (BP6105) or equivalent to mechanically secure a row of panels to the 1-Bar to maintain correct alignment and to prevent subsequent misalignment during routine access and replacement. The bottom panels of RH215 Faceted system must be secured to the 1-Bar with the Anchor Clamp to prevent the panels from sliding off the 1-Bar.

### 3.4 Panel Penetrations

Holes cut for sprinkler heads, light fixtures, speakers and other services that penetrate the ceiling panel may be field or factory cut. See separate MetalWorks installation instructions for details at [armstrong.com/installation](http://armstrong.com/installation).

## 3.5 Panel Removal

Removal is simply the reverse of installation.

**Step 1:** Push up on the RH215 panel to disengage the corner hooks

**Step 2:** Gently slide the panel in either direction (typically the short sides)

**Step 3:** Lower the opposite end until it clears the 1-Bar

**Step 4:** Gently slide the panel towards the lowered end until the opposite end comes off the 1-Bar and lower the panel

*(See Drawing 3 on page 6)*

## 4 PERIMETER DETAILS

The perimeter panels will all be full size. End details are designed to conceal the suspension system or use a perimeter trim option to cover the perimeter edges.

### 4.1 Extended Panel Edge

Curved RH215 perimeter panels can have an extended panel edge to cover the 1-Bar.

*(See Drawing 4 on page 7)*

### 4.2 Perimeter Trim

Optional custom perimeter trim can be fastened to the suspension system to conceal the RH215 Faceted perimeter panels.

*(See Drawing 4 on page 7)*

**RH215 Faceted Hook-on System is a custom-designed ceiling. Please refer to the shop drawings for specific details and dimensions.**

## 5. SEISMIC INSTALLATIONS

### 5.1 Seismic Design Category

The following recommendations are solutions to meet installation requirements in areas of moderate to severe seismic activity (IBC - C, D, E and F). The local authority having jurisdiction must approve all seismic installation details before installation begins.

### 5.2 Curved RH215 Suspension System

The U-profiles and Curved 1-Bars are the suspension system for MetalWorks RH215 panels. This system must be restrained to maintain less than 1/4" of system movement.

#### 5.2.1 U-profile

The U-profile end can be positively attached to one perimeter wall OR lateral rigid bracing to structure. (See Drawing 6)

#### 5.2.2 1-Bar

The 1-Bar end can be positively attached to one perimeter wall OR lateral rigid bracing to structure. Splice adjoining 1-bars with 1-bar splice plate and 2 self-drilling sheet metal screws for positive attachment.

*(See Drawings 5 & 6 on pages 8 & 9)*

### **5.2.3 System Restraints**

#### **5.2.3.1 Lateral Force Bracing**

Typical system restraints are the 4-wire cluster splay bracing and compression post. This must be made at an intersection of U-profile and 1-bar. Fasten compression post to U-profile with #10 self-drill sheet metal screws or equivalent. Refer to the local authority for system restraint requirements.

*(See Drawing 6 on page 9 for typical splay bracing and compression post installation)*

#### **5.2.3.2 Rigid bracing**

Installations not anchored to the perimeter walls or floating clouds require rigid bracing to structure strong enough to resist lateral forces imposed upon it without damaging the system or allowing panels to fall from the ceiling.

#### **5.2.4 Full Panels**

It is recommended that a full row of RH215 panels be securely fastened to the 1-bar. Use Seismic Anchor Clamp (BP6105) screwed to the 1-bar with #7 x 7/16" self drill metal screws. Bend both tabs of the Seismic Anchor Clamp down over the top flange of the 215 panel. Depending on panel width and ceiling accessibility, secure a row of panels every 8 to 12 feet to aid in panel alignment and system integrity. The bottom panels of Curved RH215 system must be secured to the 1-Bar with the Seismic Anchor Clamp to prevent the panels from sliding off of the 1-Bar.

*(See Drawing 2 on page 5)*

#### **5.2.4.1 215 Spring**

All RH215 Hook-on panels must have 215 Springs (BP6104) installed to maintain secure engagement on the 1-bar. The 215 Spring easily installs onto the 1-bar before panel installation. Panels up to 16" wide require one 215 Spring located at the middle of each panel edge. Panels wider than 16" require two 215 Springs located within 6" of each panel corner hook.

*(See Drawings 5 & 7 on pages 8 & 10)*

#### **5.2.4.2 Installing Panels**

The 215 Spring will not interfere with panel installation. See step 3.2 of the standard Installation Instructions. The RH215 panel flange will lift the 215 spring as the panel is installed. The 215 Spring provides positive tension on the RH215 panel to keep it engaged on the 1-bar.

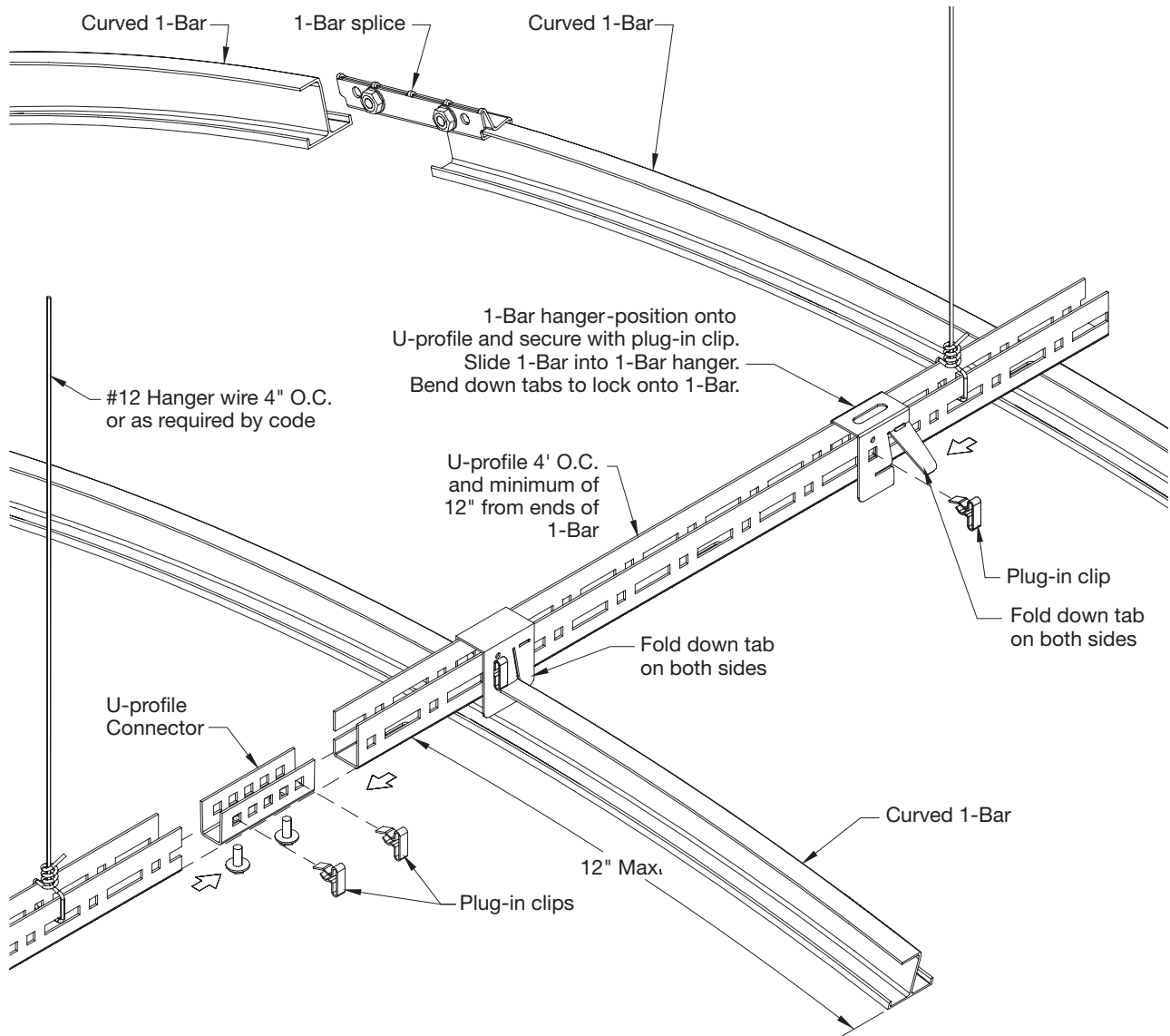
#### **5.2.4.3 Panel Removal**

The 215 Spring tension does require more care for panel removal. Follow step 3.5 of the standard Installation Instruction. Two people are required to remove panels when 215 springs are used. Raise both panel ends evenly and only high enough to clear the panel hooks. Shift to panel in either direction, one end will pass above the adjacent RH215 panel allowing the opposite end to lower below the 1-bar. Now shift the panel back until the end hooks clear the 1-bar and lower the RH215 panel off the suspension system.

# RH215 Faceted 1-Bar Installation

## DRAWING 1

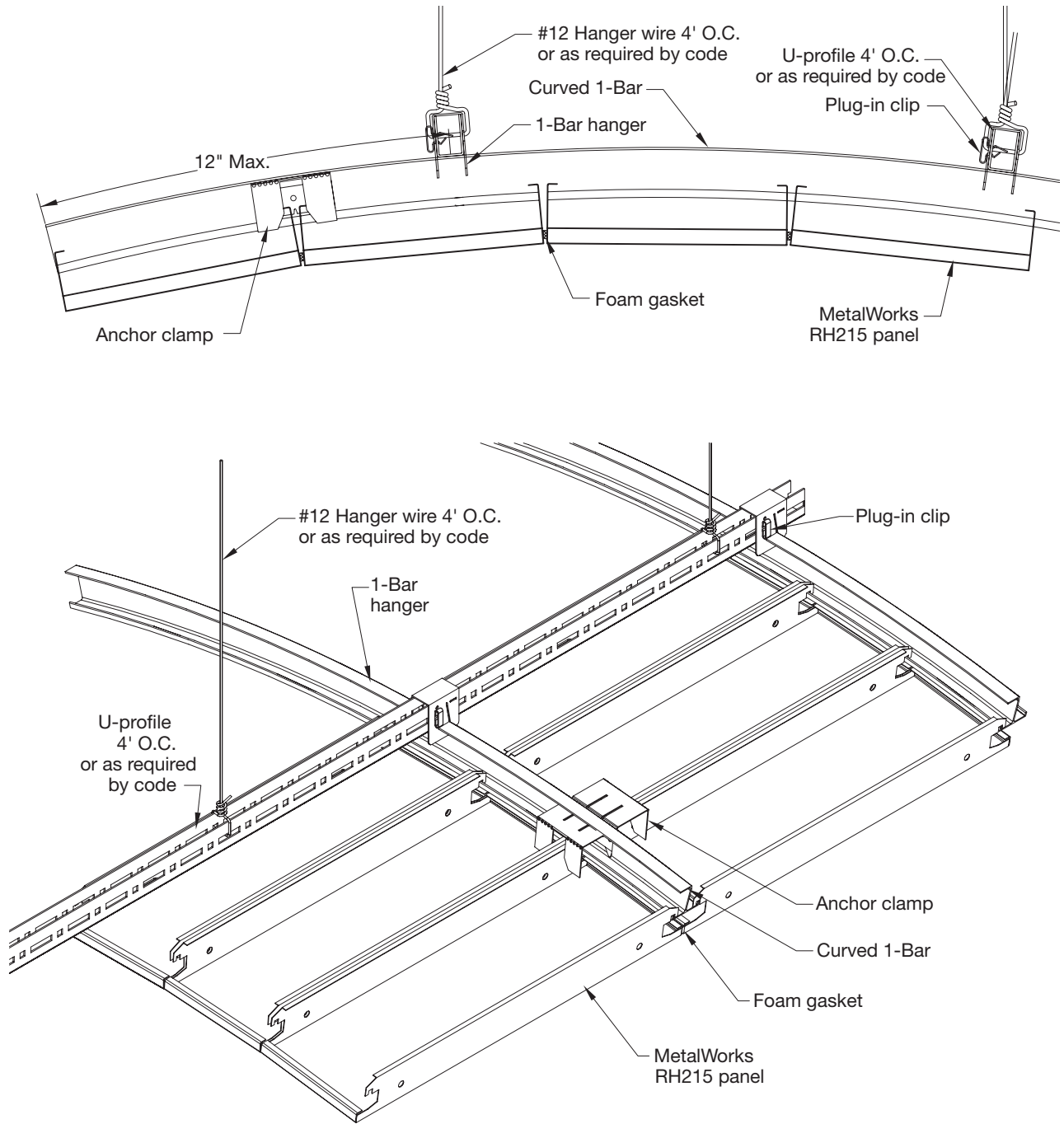
U-profiles are installed 48" on center with a maximum of 12" to the end of the 1-Bar. U-profiles are suspended with 12 GA Galvanized wire, wires must be within 18" to the ends of the U-profile. Hanger wires must be wrapped tightly with 3 full wraps within 3" of the U-profile. See shop drawings for specific elevation dimensions for the U-profile. Position 1-Bar hangers on the U-profile and raise the 1-Bar up against the bottom of the U-profile and slide the 1-Bar into the 1-Bar hanger slot to secure the components together. Bend both tabs on the 1-Bar hanger down. Use the plug-in clip to secure the 1-Bar hanger to the U-profile at the desired module. Use the 1-Bar splice to connect adjoining sections of 1-Bar.



# RH215 Faceted 1-Bar Installation

## DRAWING 2

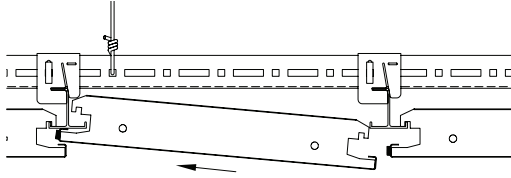
RH215 panel corners have a hook detail that allows the panel to engage on the 1-Bar. Both ends are the same so either end can be installed or removed first. Refer to the shop drawing for correct panel size and orientation. The use of a laser or string line is recommended to establish straight panel alignment. Panels may be slid along the 1-Bar to adjust alignment as necessary. Use the anchor clamp to secure the bottom row of panels to the 1-Bar.



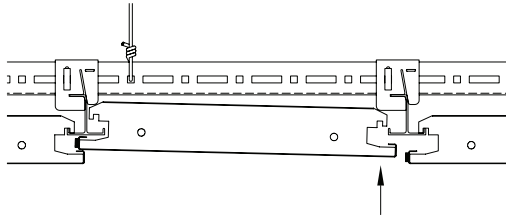
# RH215 Faceted Perimeter Options

## DRAWING 3

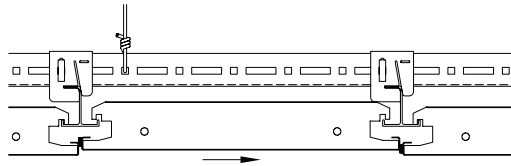
### INSTALLATION OF METALWORKS RH215 PANELS



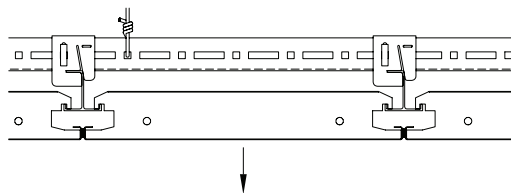
**Step 1:** Fully insert the left side of panel above adjacent panel.



**Step 2:** Raise right side of panel so the corner hook is above the 1-Bar.

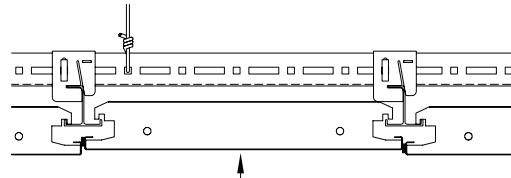


**Step 3:** Slide RH215 panel to the right until the corner hook is over top of the 1-Bar.

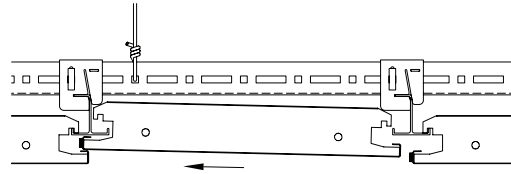


**Step 4:** Lower MetalWorks panel evenly onto 1-Bar. Check panel(s) for proper alignment.

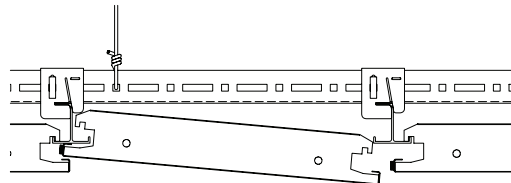
### REMOVAL OF METALWORKS RH215 PANELS



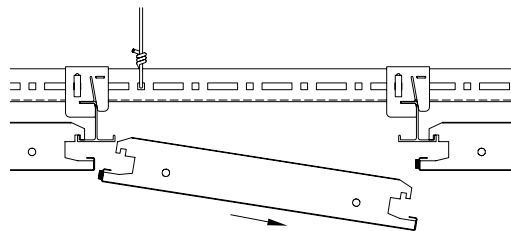
**Step 1:** Carefully lift panel evenly so that the corner hook disengages the 1-Bar.



**Step 2:** Slide desired panel for removal to the left. Slide panel face into gap below 1-bar of adjacent MetalWorks panel (careful not to scratch panel face). Be sure that the corner hook-on left of MetalWorks panel is clear of 1-Bar.



**Step 3:** Lower right side of MetalWorks panel below the bottom edge of 1-Bar.



**Step 4:** Slide MetalWorks panel to right past the bottom of 1-Bar on left. Lower panel past 1-bar on left. Make sure panel clears 1-Bar carefully.

# Installation and Removal of MetalWorks RH215 Panels

## DRAWING 4

RH215 Hook-on panels will have an extended flange on the outside row of panels to conceal the suspension system. See shop drawings for specific perimeter deals.

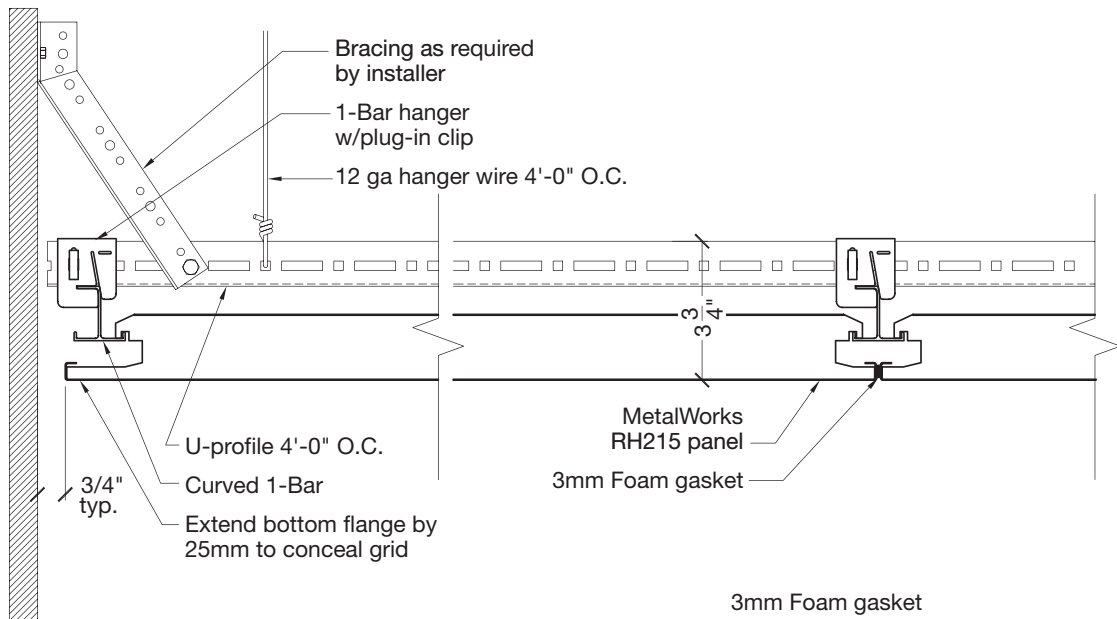
### Top Detail:

Systems installed along perimeter walls must be laterally braced to the wall for stability and alignment.

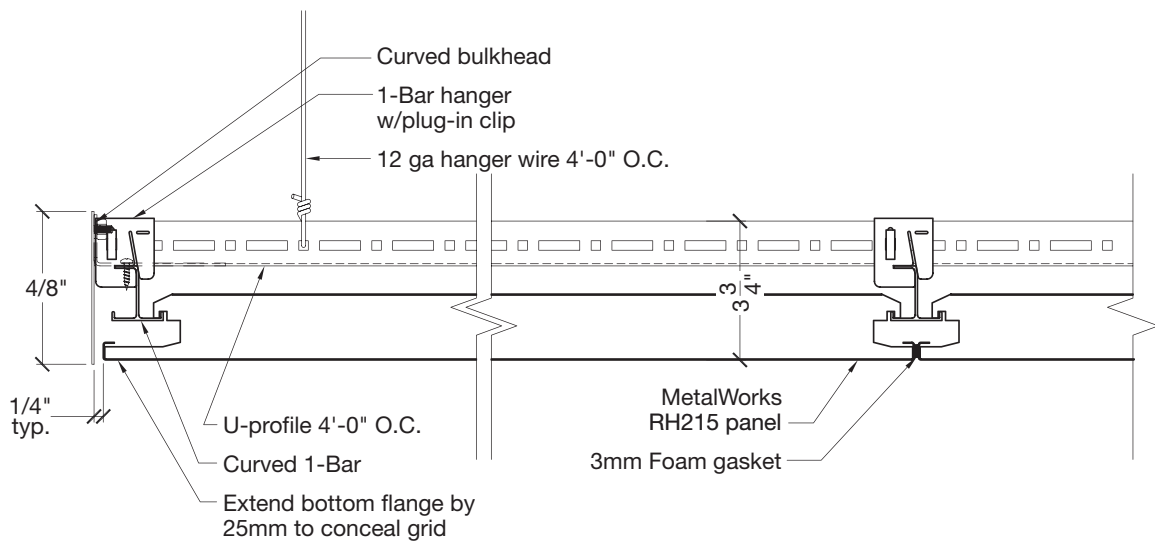
### Bottom Detail:

Floating systems or clouds can use a custom perimeter bulkhead that fastens to the U-profile and 1-Bar to conceal suspension system.

WALL PERIMETER OPTION



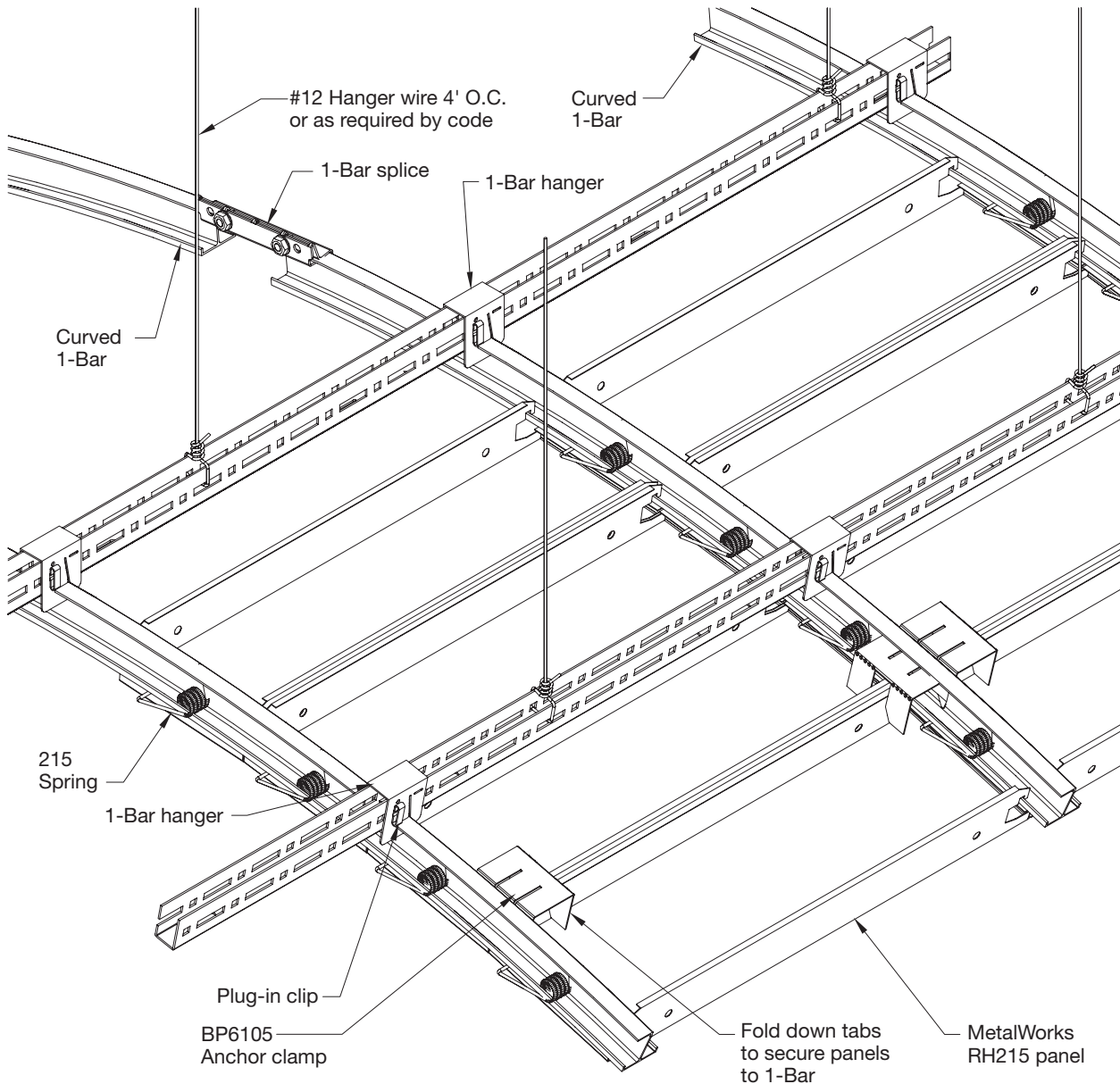
FLOATING SYSTEM OR CLOUD PERIMETER OPTION



# RH215 Faceted Seismic Installation

## DRAWING 5

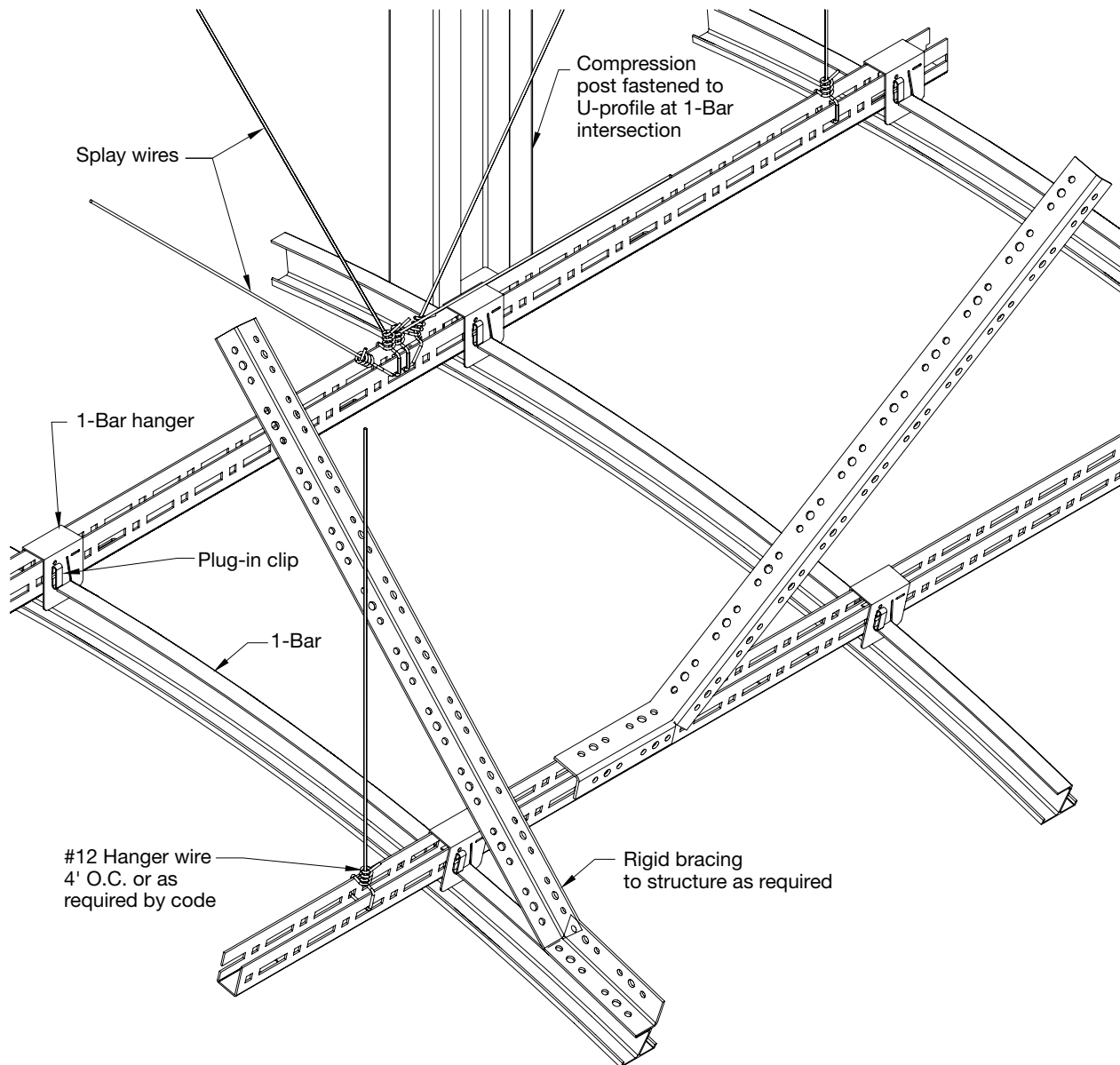
Splice adjoining 1-Bars with the 1-Bar splice plate and 2 self-drilling sheet metal screws into the top of the 1-Bar for positive attachment. All RH215 hook-on panels must have 215 springs (BP6104) installed to maintain secure engagement on the 1-Bar. The 214 spring easily installs onto the 1-Bar before panel installation. Panels up to 16" wide require one 215 spring located at the middle of each panel edge. Panels wider than 16" wide require two 215 springs located within 6" of each panel corner hook. Full rows of RH215 panels must be securely fastened to the 1-Bar. Use seismic anchor clamp BP6105 screwed to the 1-Bar with #7 x 7/16" self drilling metal screws. Bend both tabs of the seismic anchor clamp down over top flange of the RH215 panels. Depending on panel width and ceiling accessibility, secure a row of panels every 8 to 12 feet to aid in panel alignment and system integrity.



# RH215 Faceted Seismic Installation

## DRAWING 6

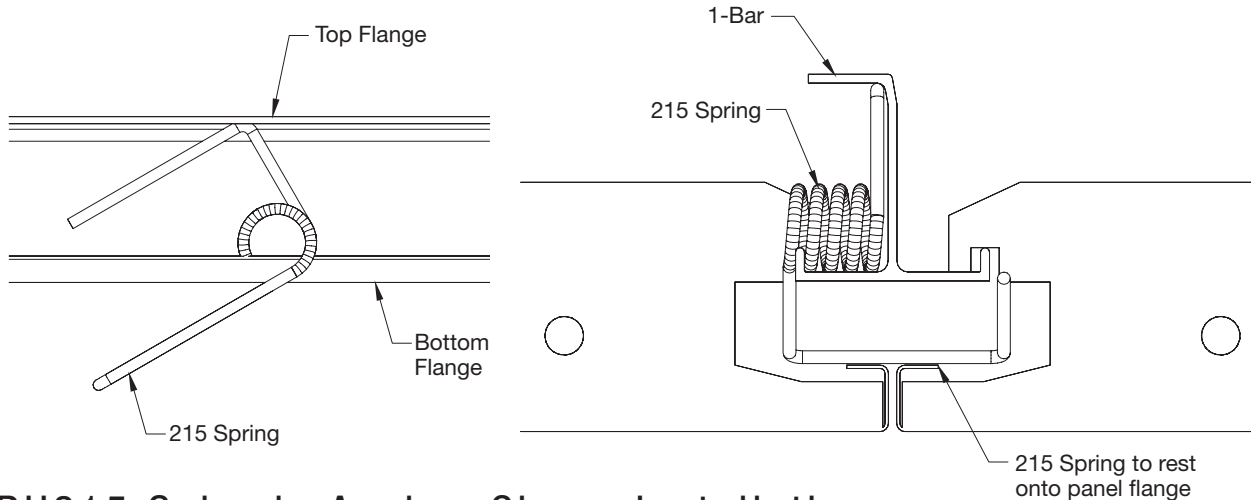
Seismic installations of curved RH215 require the suspension system be restrained with lateral force bracing. Typical system restraints are the 4-wire cluster splay bracing and compression post, this must be made at an intersection of U-profile and 1-Bar. Fasten compression post to the U-profile with #10 self-drill sheet metal screws or equivalent. Rigid bracing to structure can be an alternative to splay wire bracing. Refer to local authority for system restraint requirements.



# RH215 Seismic Spring Installation

## DRAWING 7

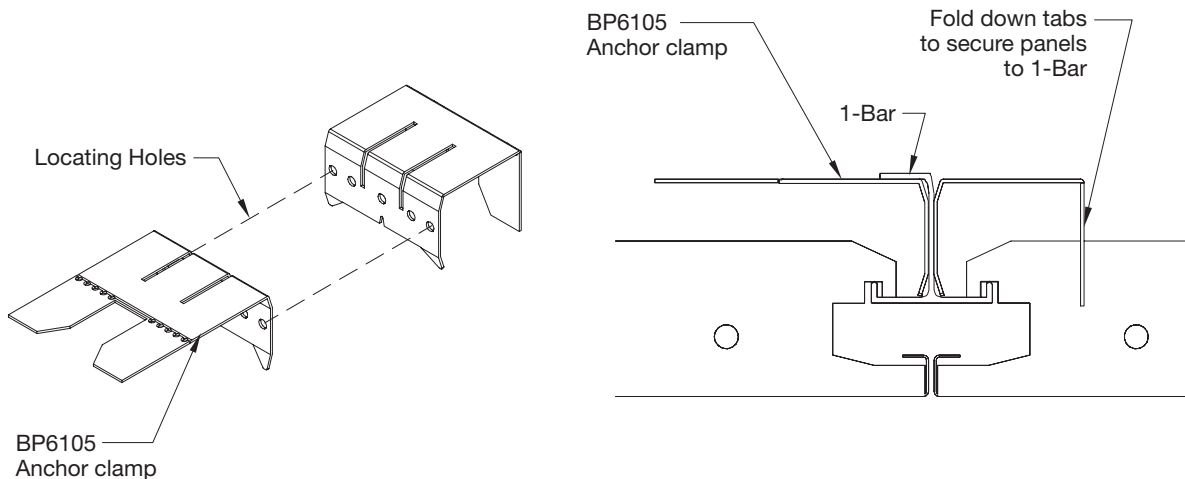
The 215 spring easily installs onto the 1-Bar before panel installation. Insert the 215 spring between the top and the bottom flange of the 1-Bar until the coil is completely resting on the bottom flange. The panel flange will raise the bottom leg of the 215 spring as the panel is installed and provide downward pressure to keep the panel hooks engaged on the 1-Bar. 215 springs are required every 16" along the 1-Bar.



# RH215 Seismic Anchor Clamp Installation

## DRAWING 8

Use the seismic anchor clamp to secure the RH215 panel to the 1-Bar. This clamp prevents the panel from sliding along the 1-Bar to maintain panel alignment with panel accessibility. Fasten the anchor clamp to the 1-Bar with #7 x 7/16" self-drilling metal screw at the panel joint location. Mount an anchor clamp on the opposite side of the 1-Bar. Use a locating hole to match the anchor clamp from the first side and fasten it to the 1-Bar. Bend both tabs of the anchor clamp down over the top flange of the RH215 panels. Use a string line or a laser to establish a straight row to mount anchor clamps for panel alignment.



## 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<sup>SM</sup> customer support at 1 877 ARMSTRONG or FAX 1 800 572 TECH.  
For the latest product selection and specification data, visit [armstrong.com/metalworks](http://armstrong.com/metalworks).

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