

# WoodWorks® Linear Veneered Panels

## Assembly and Installation Instructions

### 1. GENERAL

#### 1.1 Product Description

WoodWorks® Linear Veneered Panels consist of unperforated panels that are downward accessible, and are designed to install on Armstrong® heavy-duty Prelude® 15/16" suspension system. All panels can be removed and reinstalled for access to the plenum. Panels are supported from the suspension system by metal hooks that are screw-attached through pre-drilled holes. Panels are fitted with safety cables to prevent falling to the floor in event of loss of grid support (*Figs 1 & 2*).

Panel size is 2' x 8' and feature nominal 4" wide or 6" wide planks.

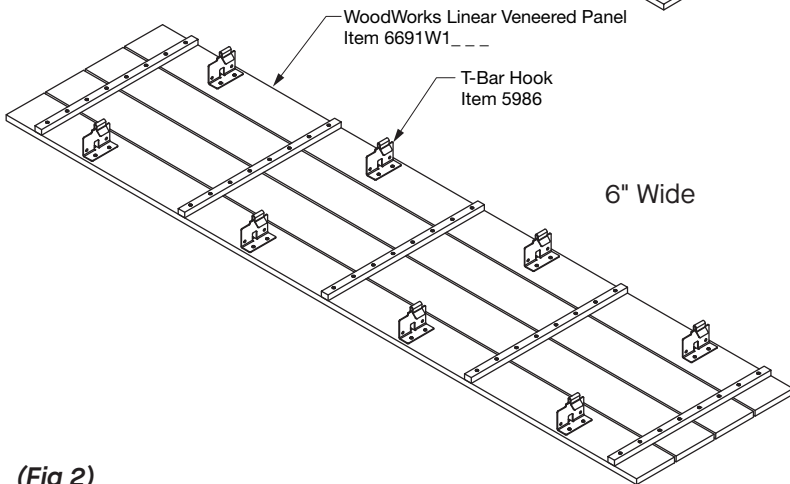
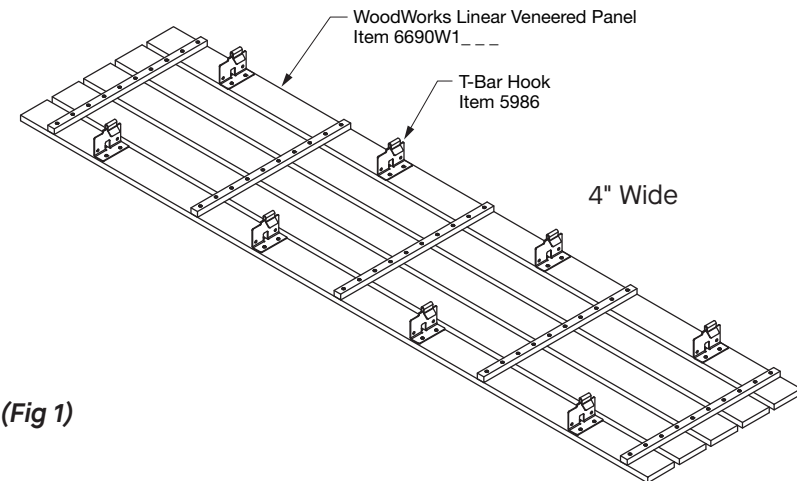
Panel, hooks, screws, and safety cables are all sold separately.

#### 1.2 Material and Surface Finish

All wood panels are constructed of fire-retardant particle board with real wood face-cut veneer. All exposed edges are banded with the same finish as the face.

#### 1.3 Storage and Handling

Ceiling components should be stored in a dry interior location and must remain in cartons or crates prior to installation to avoid damage. The cartons should be stored in a flat, horizontal position. The protectors between panels should not be removed until installation. Proper care must be taken when handling to avoid damage and soiling. Do not store in unconditioned spaces with humidity greater than 55% RH or lower than 25% RH and temperatures lower than 50°F or greater than 86°F. Panels must not be exposed to extreme temperatures, for example, close to a heating source or near a window where there is direct sunlight.



## 1.4 Site Conditions

WoodWorks® ceiling panels and veneer-wrapped trim should be permitted to reach room temperature and have stabilized moisture content for a minimum of 72 hours before installation. (Remove plastic wrap to allow panels to acclimatize.) They should not, however, be installed in spaces where the temperature or humidity conditions vary greatly from the temperatures and conditions that will be normal in the occupied space.

### 1.4.1 HVAC Design and Operation

Proper design for both supply air and return air, maintenance of the HVAC filters, and building interior space are essential to minimize soiling. Before starting the HVAC system, make sure air supply is properly filtered and the building interior is free of construction dust.

### 1.4.2 Temperature and Humidity During Installation

WoodWorks ceiling panels are interior finish products that are designed for installation to be carried out in temperature conditions between 50°F (10°C) and 86°F (30°C), in spaces where the building is enclosed and HVAC systems are functioning and will be in continuous operation. Relative humidity must not fall below 25% RH or exceed 55% RH. There must be proper ventilation of the plenum in high moisture areas.

All plastering, concrete, terrazzo, or any other wet work must be completely dry. All windows and doors must be in place. The heating, ventilation, and air-conditioning system should be installed and operable where necessary to maintain proper temperature before, during, and after installation of the WoodWorks panels.

## 1.5 Veneer Options

WoodWorks Linear Veneered Panels are available in 14 standard real wood veneer options: Maple (NMP), Light Cherry (NLC), Walnut (CWA), Redux Wood Wheat (CRW), Plain Slice White Maple (NWM), Plain Slice White Ash (NWA), Plain Slice White Oak (NOK), Plain Slice Cherry (NPC), Plain Slice Walnut (NWN), Vertical Grain Fir (NVF), Rift White Oak (NRO), Quartered Walnut (NQW), Quartered Sapele (NQS), and Quartered Mahogany (NQM). Natural variations in color and grain are characteristic of wood products. To maximize visual consistency, panels should be unpacked and examined collectively to determine the most desirable arrangement for installation. Where consistency is critical, Armstrong can offer custom solutions to meet your budget and aesthetic requirements. Consult HPVA for additional information on veneers and veneer grades.

## 1.6 Cleaning Recommendations

WoodWorks Linear Veneered Panels can be cleaned with a soft, dry cloth.

## 2. DESIGN AND INSTALLATION CONSIDERATIONS

### 2.1 Panel Face Offset

WoodWorks Linear Veneered Panels hang below the suspension system to which they are attached. The face of the installed panels will be 2-7/8" below the face of the suspension system from which they are supported. The plenum may be visible through the 1/4" panel reveal.

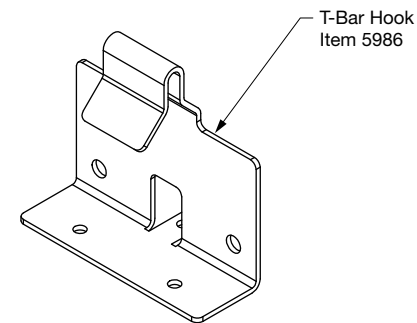
Use of large wood panels may result in deflection up to 1/8" and alignment inconsistency due to size and ambient conditions.

### 2.2 Slopes and Exterior Installations

Not recommended for sloped and exterior ceiling installations.

## 3. ACCESSORIES

### 3.1 T-Bar Hook (Item 5986) (Fig 3)



(Fig 3)

### 3.2 Wood Screws (Item 7123PKG300)

### 3.3 Safety Cable (Item 6091)

### 3.4 Support Hanger (Item SH12)

### 3.5 Infill Panels

BioAcoustic™ infill panels, Item 5823 (24" x 24"), Backstage Noir®, Item 1318 (24" x 24"), School Zone® Fine Fissured™, Item 1713BL (24" x 24"), Calla® Square Lay-in, Item 2820BK (24" x 24"), and Fiberglass Infill Panel, Item 8200T10 (24" x 24"), provide acoustics performance and hide the plenum.

## 4. SUSPENSION SYSTEM FOR WALL-TO-WALL INSTALLATION

### 4.1 General

Use heavy-duty 15/16" Prelude® XL® T-Bar suspension system, main beams, cross tees, and wall molding to support the WoodWorks® Linear Veneered Panels. All installations should follow ASTM C636. All references to suspension component duty ratings are per ASTM C636.

The suspension system is directional; WoodWorks Linear Veneered Panels install perpendicular to the main beams. Refer to the reflected ceiling plan to determine the suspension system layout to ensure main beams run perpendicular to the panel length.

Hangers and bracing are to comply with all local code requirements. The suspension system must be properly installed and leveled using no less than 12-gauge galvanized steel wire. The suspension system must be leveled to within 1/4" of 10' and must be square to within 1/16" of 2'. Installation on suspension systems that do not meet this tolerance will produce unacceptable panel alignment.

The requirements listed here represent the manufacturer's minimum acceptable installation recommendations, and may be subject to additional requirements established by the local authority having jurisdiction.

### 4.2 Load Capacity

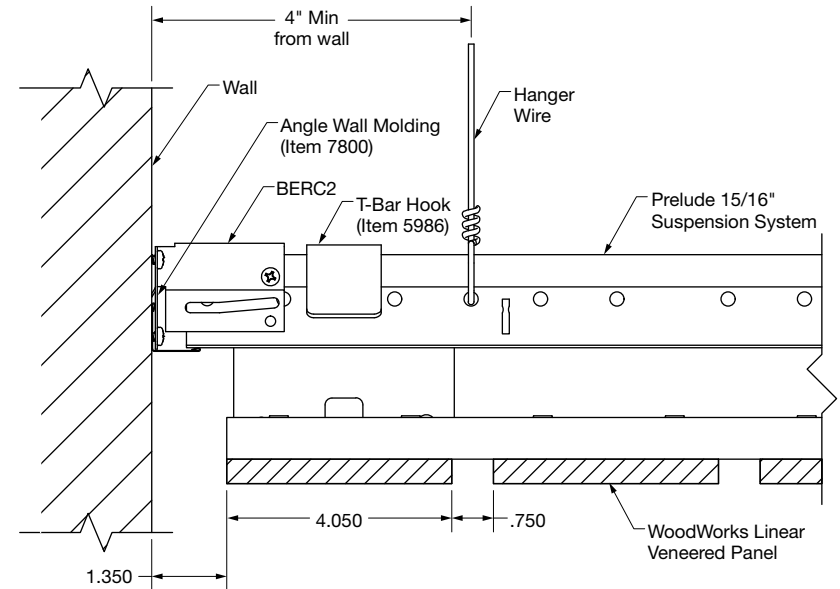
WoodWorks Linear Veneered Panels weigh 2.75 LBS/SF. Therefore, heavy-duty main beams are required by building code. Main beams must be capable of carrying the weight of the panels plus any additional ceiling components that are not independently supported from the building structure.

### 4.3 Grid Installation

Follow these instructions carefully to complete the installation of the suspension system.

#### 4.3.1 Wall Molding

Use wall molding (Item 7800) at the perimeters. Molding should be attached to the wall 2-7/8" above the finish ceiling height (**Fig 4**). Secure the ends of the grid with pop-rivets. BERC2 clips can also be used in place of pop-rivets for a clean visual.



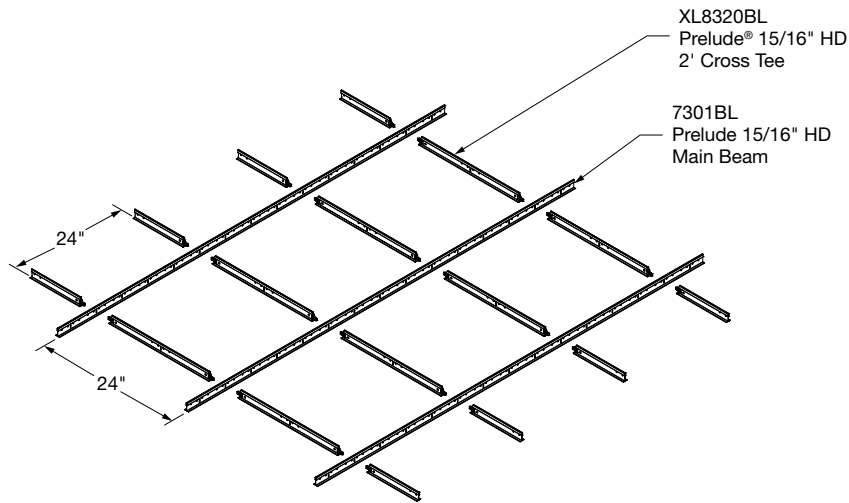
(Fig 4)

**IMPORTANT NOTE:** If using BERC2 in place of rivets, the clips adjacent to the molding must be relocated 3/8" towards the center of the panel. Draw lines through the factory-drilled pilot holes across the back of the panel. Shift the outer clips 3/8" towards the center of the panel and secure each with three screws.

Hanger wires should not be attached to the grid less than 4" from the wall. These wires will interfere with clip installation.

#### 4.3.2 Grid Layout (Fig 5)

The suspension system for this system does not line up with the panel edges. The main beams are located one foot from the short side of the panels and then 2' O.C. The cross tees install perpendicular to the main beam every 24", creating a 24" x 24" grid module.

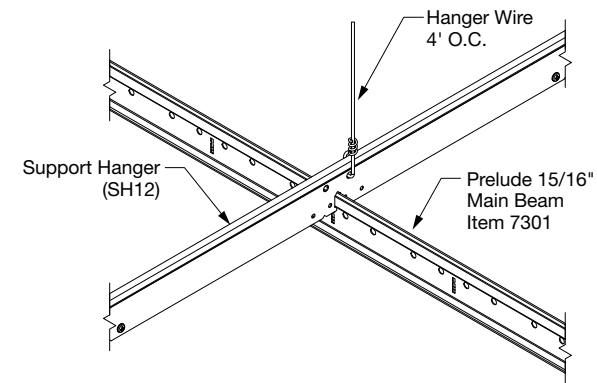


(Fig 5)

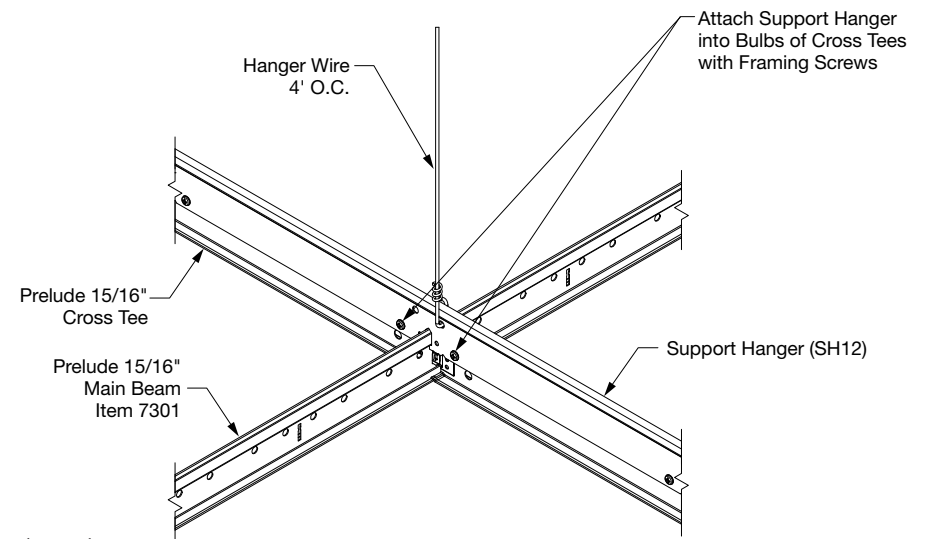
Up to 10" may be cut from the end of the panel before the grid location at the cut end must be altered. When more than 10" must be removed, install a main beam one foot closer to the center of the panel.

#### 4.3.3 Optional Installation with Support Hanger (SH12) (Figs 6 & 7)

SH12 support hanger can be used to reduce the number of hanger wire attachments to the main beams. If the support hanger is not used, hanger wires will be required on main beams every 4' along the main. Where sections of support hanger must be joined together, overlap one notch and secure with framing screws inserted through the holes provided.



(Fig 6)



(Fig 7)

**4.3.3.1** Open the mount of the support hanger notches where mains must be installed by bending with a pair of pliers. Cut the first main beam in each row to provide a cross tee rout hole at the long edge of the first row of panels. Insert the main beams into the support hanger notches and close the mouth by bending the tab back under the bulb of the main. Work carefully to ensure that each tab is properly seated under the bulb of the main.

**4.3.3.2** Install 2' cross tee, above the long edges of the panels to complete the grid installation. Swing the support hanger out of the way to provide clearance for the ends details on the tees. Install all of the tees in a row and then secure the support hanger by inserting a framing screw through the hole provided and into the bulb near each end of each tee.

**4.3.3.3** SH12 are supported from structure with 12 gauge wires starting 2' from the perimeter then 4' O.C. along the length of SH12.

For seismic installation, refer to Section 8.

## 5. PANEL INSTALLATION

### 5.1. Cutting the Panel

Cut the panel using standard woodworking tools and, where possible, a straight edge. A table saw is recommended for straight cuts and a band saw for curved cuts. In general, these practices will be typical of those employed in finish carpentry.

**▲CAUTION! WOOD DUST.** Sawing, sanding, and machining wood products can produce dust. Airborne wood dust can cause respiratory, eye and skin irritation. The International Agency for Research on Cancer (IARC) has classified wood dust as a nasal carcinogen in humans.

**Precautionary measures:** Avoid inhalation of dust. If power tools are used, they should be equipped with a dust collector. If high dust levels are encountered, use an appropriate NIOSH-designed dust mask. Avoid dust contact with eyes and skin.

**First Aid Measure in case of irritation:** Flush eyes or skin with water for at least 15 minutes.

#### 5.1.1 Starting Row

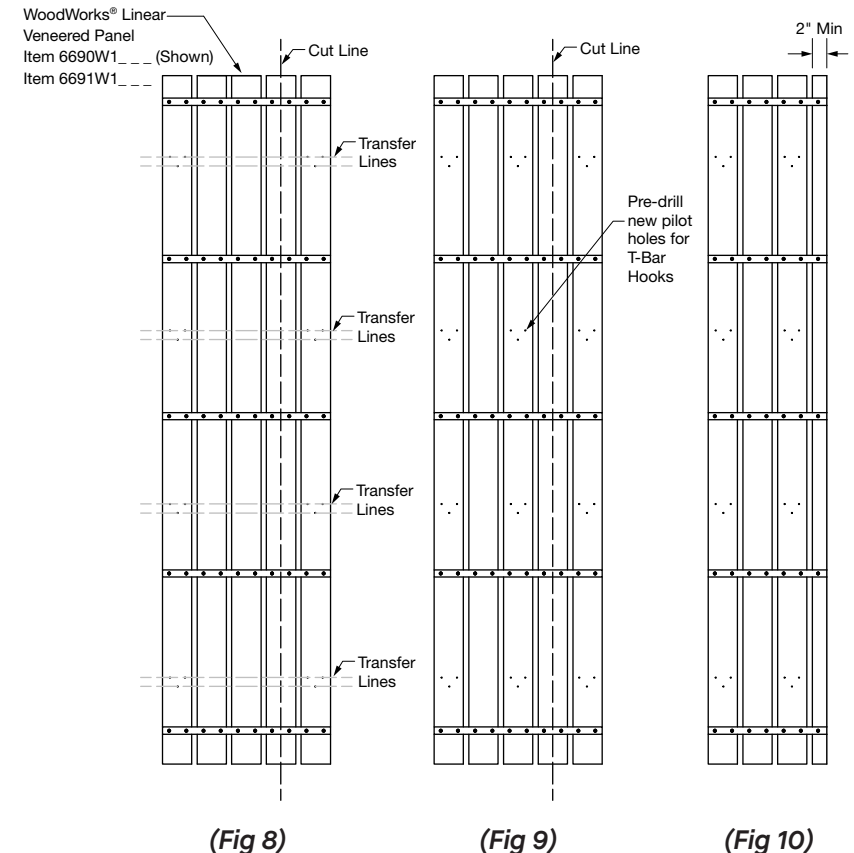
Check the orientation of the hooks when attached to the pre-drilled holes on the back of the panel. The starting row must be installed such that the open side of the hooks will be facing the wall. Cut the panel as required considering the reveal dimensions listed in Section 4.3.1.

#### 5.1.2 Relocating Hooks

If cutting the panel will remove any of the hook attachment holes these should be relocated prior to cutting.

### 5.1.3 Cutting the Long Edge (Figs 8 - 10)

When the long edge of the panel is to be cut, first use a straight edge to draw lines across the back of the panel through the factory holes. Cut the panel to size. Attach a T-Bar Hooks (Item 5986) to each set of factory-drilled holes; three screws are required in each clip. Measure the grid opening and place clips on the reference lines so that the dimension from the outer edge of the factory located clip to the outer edge of the relocated clip matches the grid opening dimension. Drill pilot holes at the new screw locations. Use a stop on the drill to prevent penetrating through the panel. Attach the relocated clips with three screws in each.

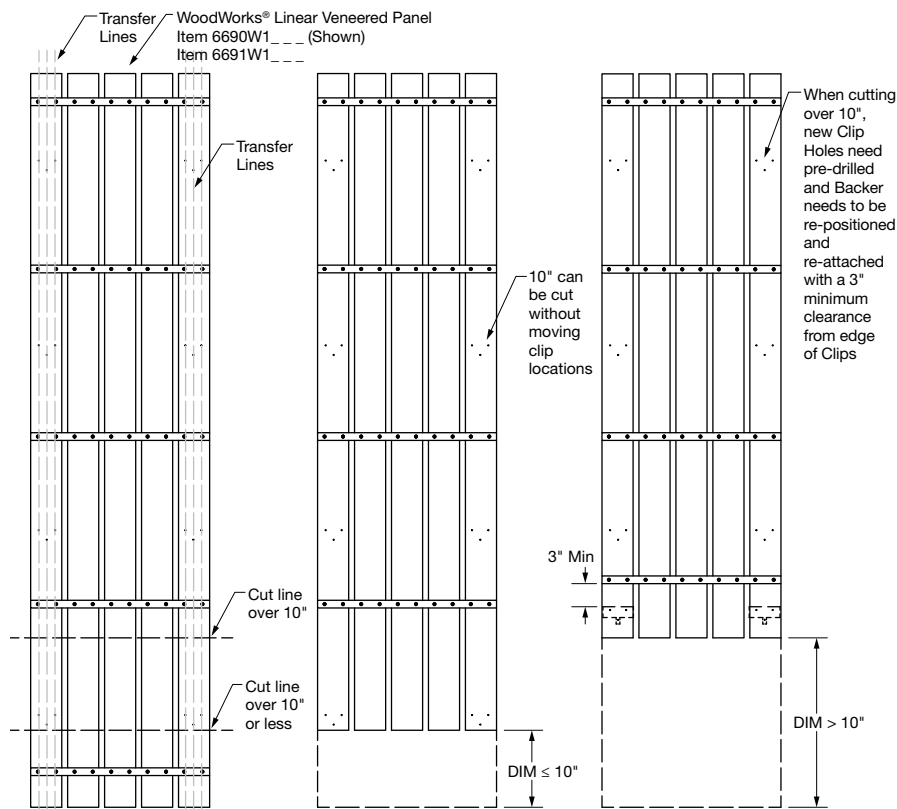


### 5.1.4 Cutting the Short Edge (Figs 11 - 13)

Up to 10" may be cut from the narrow end of a panel without moving clip locations. When more than 10" must be removed begin by carefully measuring back 12" from the factory holes toward the center of the panel and draw lines across the back of the panel. Cut the panel and attach the hooks to the factory holes and on the lines. Be careful to maintain the correct position along the lines. Measure the factory holes for uncut edges and follow the procedure in Section 5.2.2 where the long edge has also been cut. Each clip must have three screws installed.

**NOTE:** Pre-drill holes prior to installation.

It is recommended to have a backer 3" from the cut end. In the event that a backer is going to interfere with the new location of the clips, the backer must be repositioned and reattached so there is a minimum of 3" clearance between the backer and the clips. New screw locations for clips is not needed when the cut is made within 12" from an existing factory pre-drilled pilot hole location.



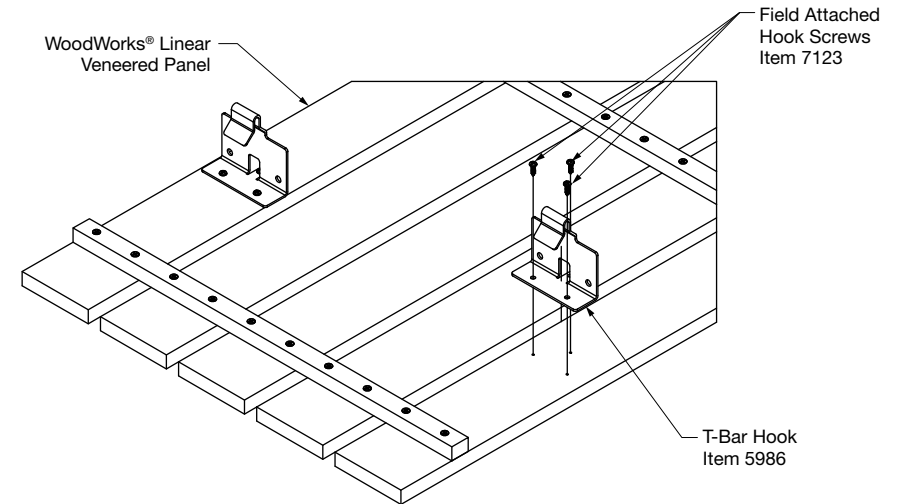
(Fig 11)

(Fig 12)

(Fig 13)

### 5.1.5 Attach Clips (Fig 14)

Attach a T-Bar Hook (Item 5986) at each set of factory-drilled pilot holes on each panel. Three screws (Item 7123PKG300) are required in each clip.



(Fig 14)

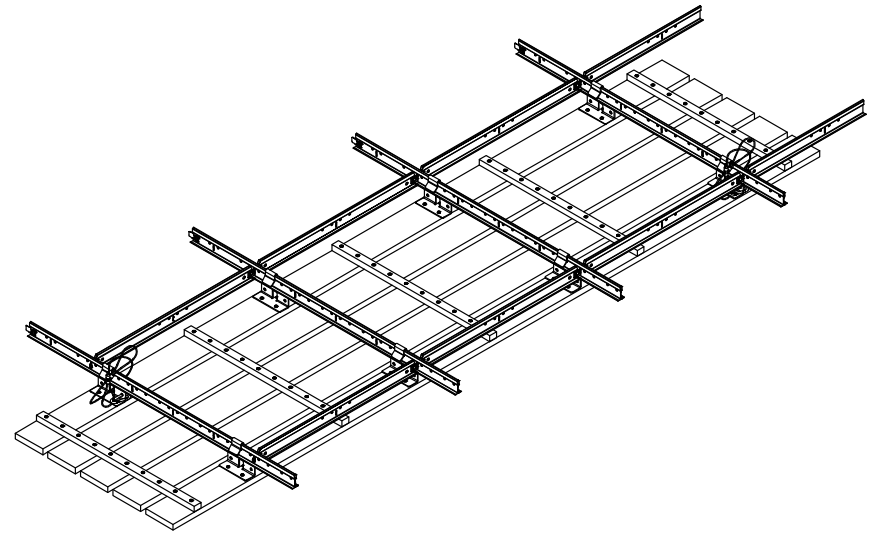
### 5.1.6 Treating Exposed Edges

Cut panel edges that are exposed to view will have to be treated to look like factory edges. Edge banding in coordinating veneer is available and will have to be ordered separately. Cut edge must be clean and smooth before applying edge banding. Peel off the release paper and apply the edge banding using finger pressure or a small trim roller. Trim excess material with a sharp knife blade or with the edge trimmer available for order through Armstrong. For finishing edges on floating or noncontinuous installations, see Section 7 in these instructions.

## 5.2 Install the Panels

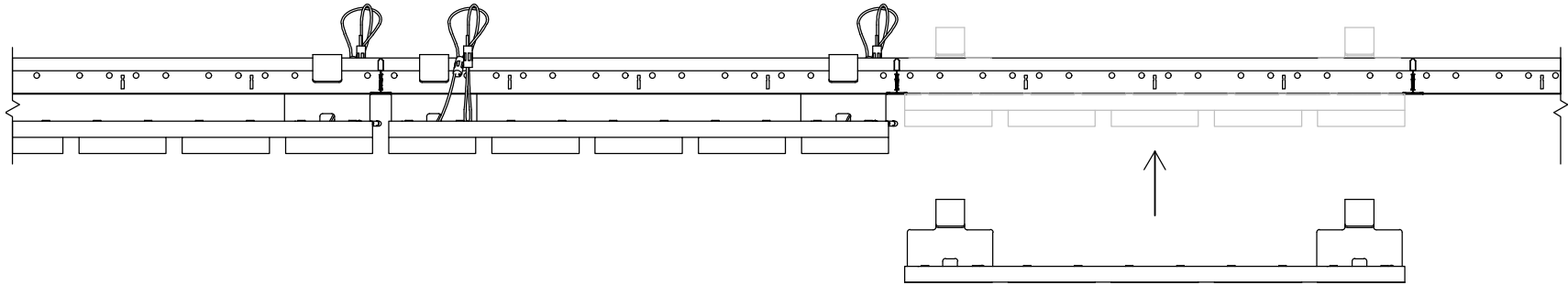
### 5.2.1 First Row (Figs 15 & 16)

First row panels are installed with the open side of the clips facing the wall. Raise the hooks above the level of the grid and move the panel toward the wall. Lower the clips onto the bulbs of the main beams. The clips will fit between the cross tees and center the panels under the grid opening. Attach two safety cables at diagonal corners of the panel. Cinch the loop end of the cable around the main beam and connect the clip at the other end to one of the holes on the hook.

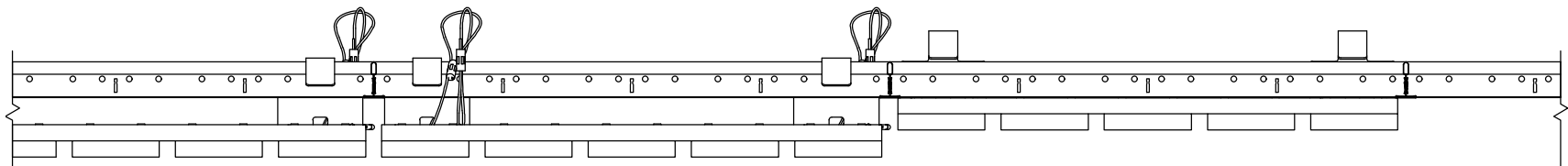


(Fig 15)

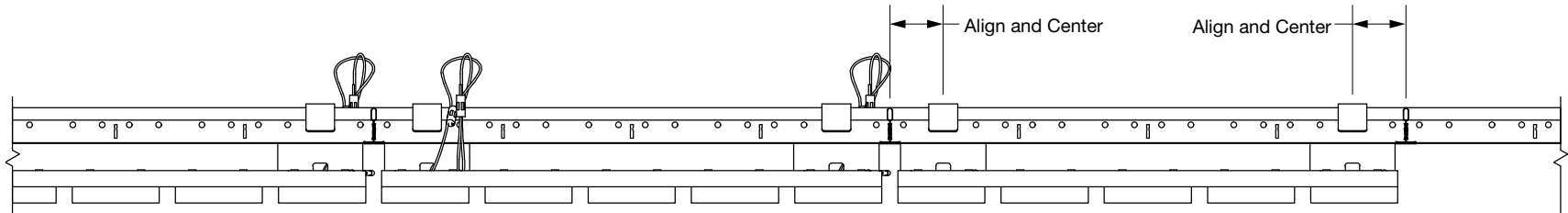
1) Raise Panel above the level of the grid and align T-Bar Hooks over the Bulbs of the Main Beams



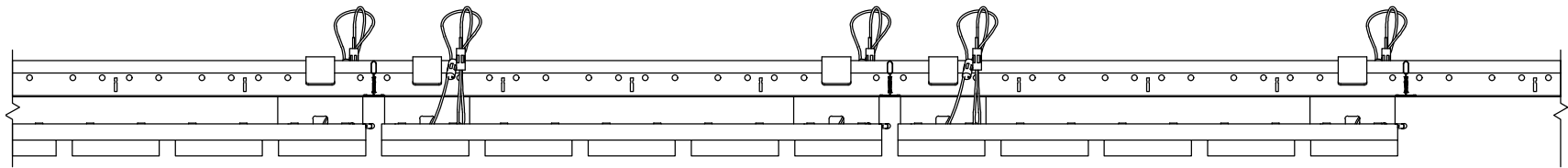
2) Lower the T-Bar Hooks onto the Bulbs of the Main Beams



3) While lowering Panel, align and center T-Bar Hooks between Cross Tees



4) Attach two Safety Cables at diagonal corners of the Panel. Cinch the loop of one end around the Main Beam and connect the Safety Cable Clip to one of the holes on the T-Bar Hook



(Fig 16)



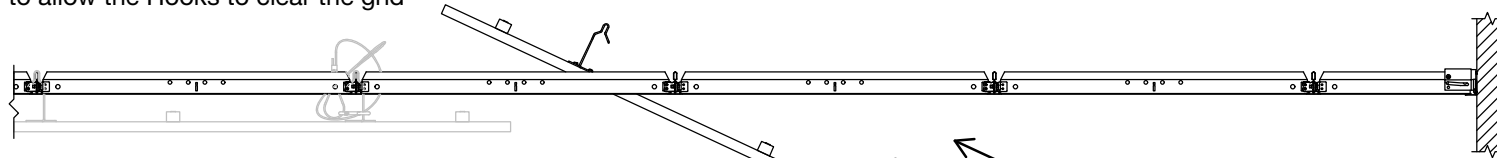
### 5.2.2 Middle Rows

Apply hooks to the remaining full-size panels and install in the same direction as the first row. Attach two safety cables to each panel as they are installed.

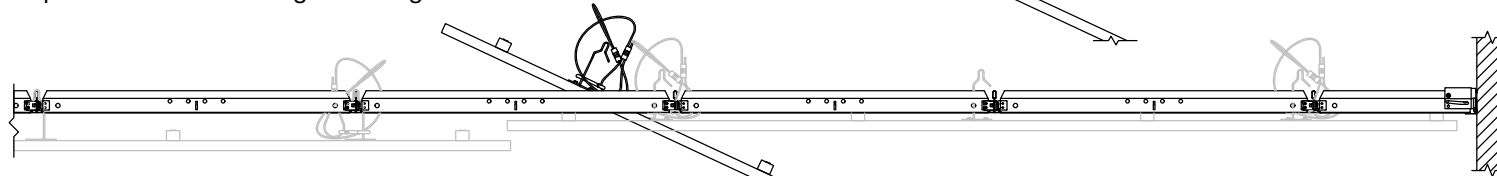
### 5.2.3 Last Row (Fig 17)

Panels in the last row are reversed so that they install with the open side of the hooks facing the ending wall. Prepare the panels as detailed in Section 5. Raise the factory end of the panel up and over the end of the one in the next to last row to allow the hooks to clear the grid. Shift the

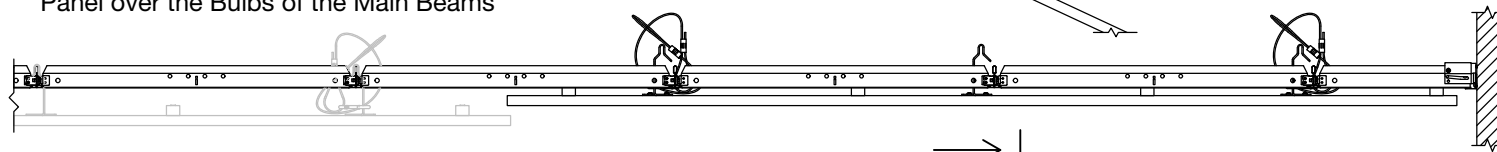
- 1) While ensuring that the open ends of the Clips are facing the wall, angle and raise the factory end of the Panel up and over the last installed Panel to allow the Hooks to clear the grid



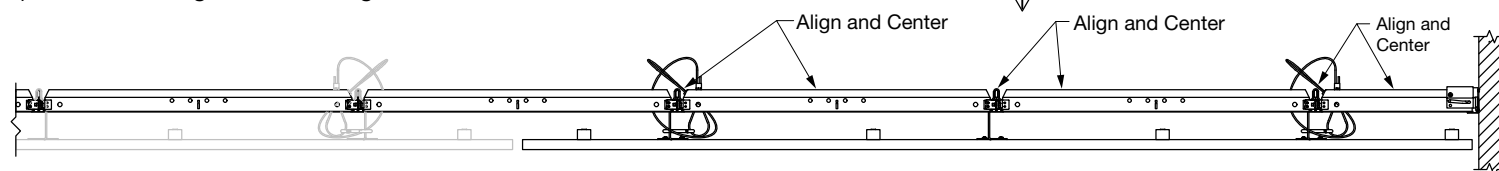
- 2) Cables must be attached on the Panel before it is positioned in the ceiling. After the Cables are installed, raise the Panel to a horizontal position above the height of the grid



- 3) Shift the Panel towards the ending wall and lower the Hooks of the Panel over the Bulbs of the Main Beams



- 4) While lowering the Panel, align and center T-Bar Hooks between Cross Tees



(Fig 17)

panel up and toward the wall to engage the hooks onto the main beams. Install safety cables as the installation progresses. Cables on the last panel must be attached before the panel is positioned in the ceiling.

## 6. PANEL REMOVAL

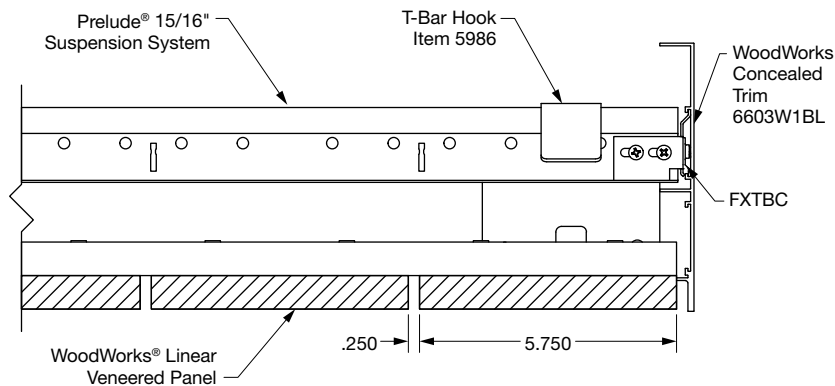
Panels are easily removed by lifting to disengage the hooks from the main beams. Lift and shift in the long direction of the panel. Border panels will always move away from the wall. Panels in the center of the installation will only move in one direction. Once the hooks have cleared the grid lower the free end of the panel until the hooks near the upper end can clear the grid. Remove the safety cables from the clips and lower the panel to the floor.

## 7. FLOATING/ DISCONTINUOUS INSTALLATION

The suspension layout for floating or cloud applications should be the same as what is detailed in Section 4. Main and cross tees need to be in place around the entire perimeter so perimeter trim can be attached to the suspension system. A minimum 2-panel long installation is recommended for floating installations. For installation with cut panels, follow the tips in Sections 5.1.3 and 5.1.4.

### 7.1 Floating Installation with WoodWorks® Concealed Trim (Fig 18)

WoodWorks Concealed Trim (Item 6603W1BL) is available in 10' lengths which can be field mitered using a power saw equipped with a blade designed to cut aluminum. WoodWorks Concealed Trim is fastened to the suspension system using the FXTBC clip. Steel splice plates (Item FX4SPLICE) are used to align and secure all joints between sections of trim. Two splice plates are required at each joint and a 1/8" hex key wrench can be used to tighten the set screws that secure the splice to the trim. **CAUTION:** Do not over tighten these screws to the point where they distort the face of the trim.

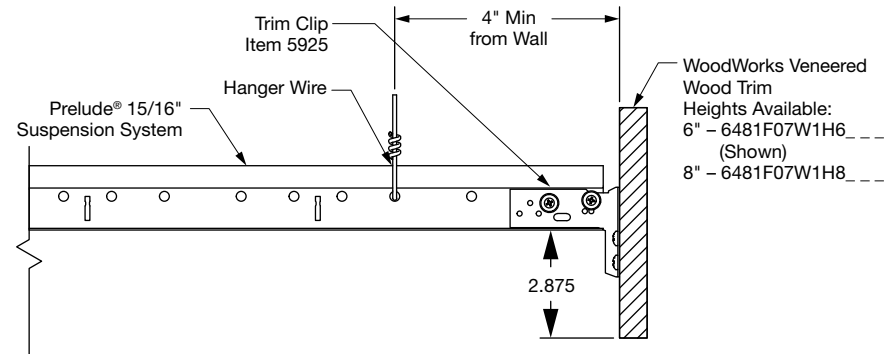


(Fig 18)

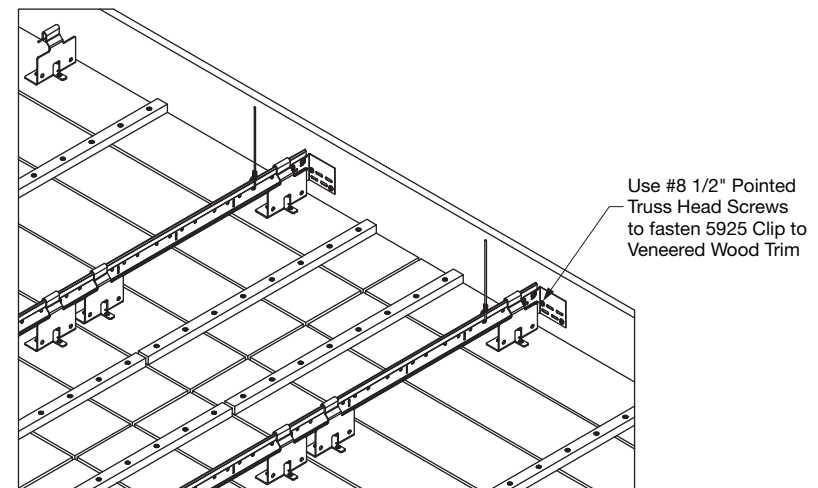
### 7.2 Floating Installation with WoodWorks Veneer Trims (Figs 19 - 21)

WoodWorks trims are available in 8' lengths in coordinating veneers. Only the 6" and 8" height trim is recommended for the best visual. These trim pieces are only to be used in clouds with straight perimeter borders. Cut the trim to fit as required and join the pieces with a #20 biscuit joint and wood glue on straight runs or mitered corners. Use two biscuit with 6" and 8" trims. A finishing pin nail can be used to hold your mitered corners together while your biscuit joint dries. Use

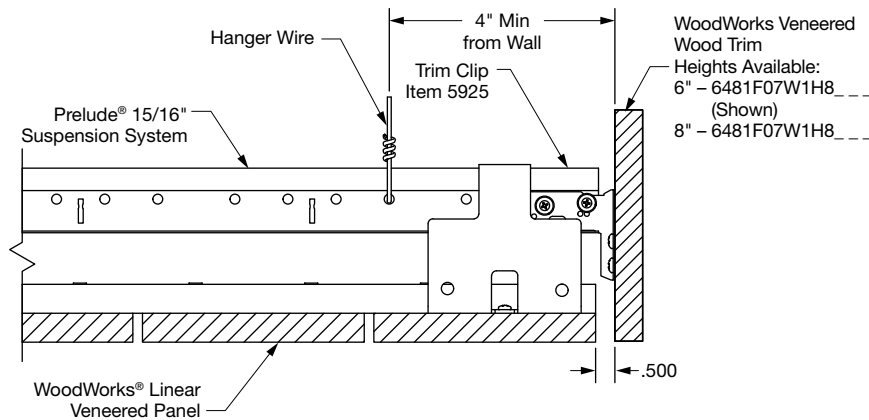
5925 Clip (included with trim) to fasten trim to the suspension system every 2' O.C. aligning with the 24" x 24" grid module. Use #8 x 1/2" pointed truss-head screws (by others) to attach 5925 to the trim. It is recommended that hanger wires are no less than 4" from the perimeter to avoid wire interference when fastening 5925 clip to the grid.



(Fig 19)



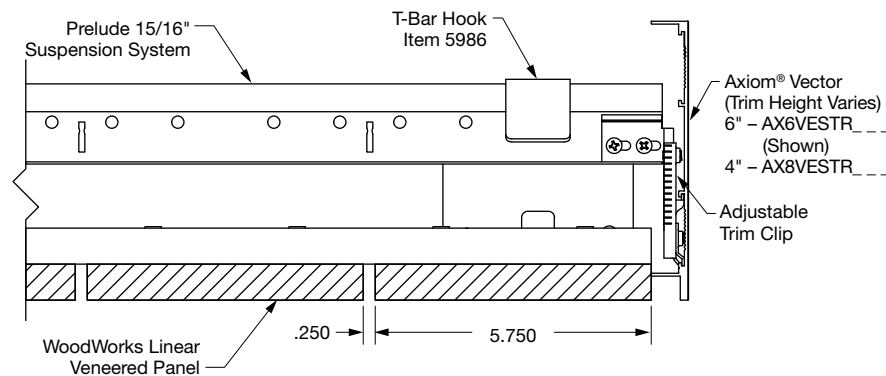
(Fig 20)



(Fig 21)

### 7.3 Floating Installation with Axiom® Vector Trim (Fig 22)

Inverted Axiom Vector can be used for straight and curved conditions for floating conditions. For best visual a minimum 6" height trim is recommended. Trim can be field mitered using a power saw equipped with a blade designed to cut aluminum. Axiom Vector is fastened to the suspension system using the adjustable trim clip (Item 7239). Steel splice plates (Item AX4SPLICE) are used to align and secure all joints between sections of trim. Two splice plates are required at each joint and a 1/8" hex key wrench can be used to tighten the set screws that secure the splice to the trim. **CAUTION:** Do not over tighten these screws to the point where they distort the face of the trim.



(Fig 22)

## 8. SEISMIC INSTALLATION

WoodWorks® Linear Veneered Panels have been engineered and tested for application in all seismic areas based on these installation procedures. The following installation guidelines are required in areas where anticipated seismic activity will be moderate to severe (IBC Seismic Design Categories C, D, E, and F). Consult the local building department to ensure compliance with their unique requirements.

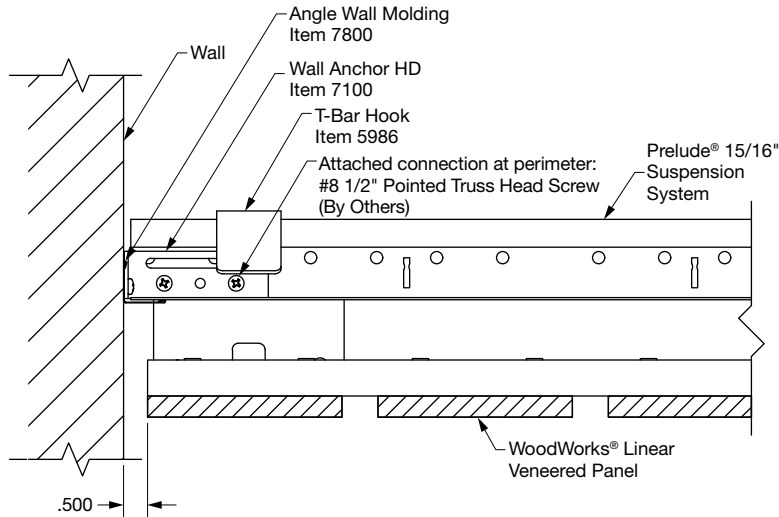
### 8.1. Suspension System Installation

Use a heavy-duty 15/16" Prelude® XL® T-Bar suspension system to support the WoodWorks Linear Veneered Panels as listed in Section 4. The installation should, in all cases, conform to the International Building Code Seismic Design Category D, E, and F. Refer to Armstrong Seismic Ceiling Installation Guide BPCS-4141 for more details. Refer to the reflected ceiling plan to determine the panel orientation. Remember to account for any infill panel weight in addition to panel weight to determine total system weight. Hook clips will install on the main beams. The first main beam should be no more than 12" off the wall and then follow the spacing requirements below. In addition to the above requirements, also follow ASTM C636 requirements. The requirements listed here represent the manufacturer's minimum acceptable installation recommendation and may be subject to additional requirements established by the local authority having jurisdiction.

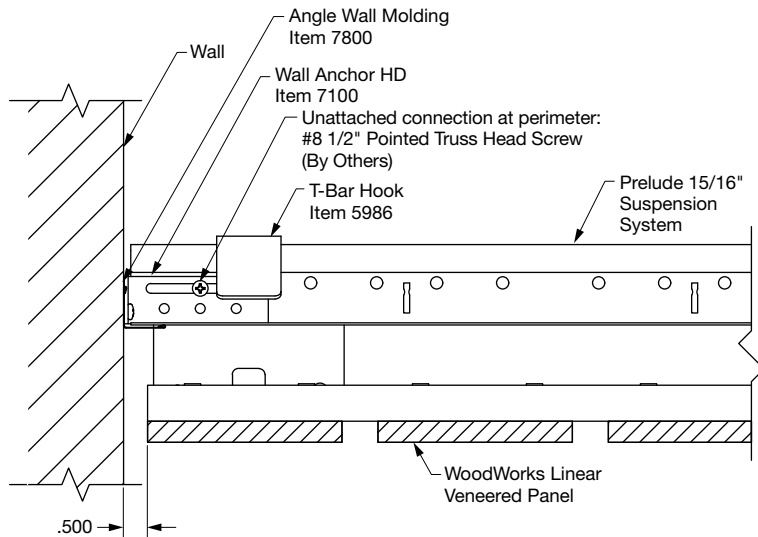
- 7301 main beams are installed starting 12" from the wall, then at 24" O.C. with hanger wires supporting at no more than 48" O.C. along the mains
- XL8320 2' cross tees installed at 24" O.C. between the main beams, creating a 2' x 2' module

- All grid connections to the wall are required to use the heavy-duty Wall Anchor (Item 7100) in lieu of the BERC2 to meet the attached and unattached wall requirements (**Figs 23 & 24**)

Up to 10" may be cut from the end of the panel before the grid location at the cut end must be altered. When more than 10" must be removed, install a main beam one foot closer to the center of the panel, refer to Section 5.0.



(Fig 23)



(Fig 24)

## 8.2 Seismic Rx®

Ceiling installation should conform to basic minimums established in ASTM C636.

- Minimum 7/8" wall molding
- Suspension system must be attached on two adjacent walls
- HD Wall Anchor maintains main beam and cross tee spacing; no other components required
- Heavy-duty systems as identified in ICC-ESR-1308
- Safety wires required on light fixtures
- Perimeter support wires within 8"
- Ceiling areas over 1,000 SF must have horizontal restraint wire or rigid bracing
- Ceiling areas over 2,500 SF must have seismic separation joints or full height partitions
- Ceilings without rigid bracing must have 2" oversized trim rings for sprinklers and other penetrations
- Changes in ceiling plane must have positive bracing
- Cable trays and electrical conduits must be independently supported and braced
- Suspended ceilings will be subject to special inspection
- Suspension layouts are the same as described in Section 4: Suspension System
- Connection to wall – See BPCS-4141 Seismic Design: What You Need to Know – Code Requirements Seismic Rx® Tested Solutions – Seismic Rx Approaches to Category C and D, E, and F Installations
- Special bracing required – See BPCS-4141 Seismic Design: What You Need to Know – Code Requirements Seismic Rx Tested Solutions – Bracing and Restraint for Seismic Installations
- Seismic separation joints – See BPCS-4141 Seismic Design: What You Need to Know – Code Requirements Seismic Rx Tested Solutions – Seismic Separation Joints

Item No. ♦	Description	Ordered Separately/ Included with	Required for Install
<b>WOODWORKS® LINEAR VENEERED PANELS</b>			
6690F01W1_ _ _	2' x 8' Panel with Nominal 4" wide Plank	Ordered Separately	Based on Design
6691F01W1_ _ _	2' x 8' Panel with Nominal 6" wide Plank	Ordered Separately	Based on Design
<b>Suspension System</b>			
7301	Prelude® XL® 12' HD Main Beam	Ordered Separately	Yes
XL8320	Prelude XL 2' Cross Tee	Ordered Separately	Yes
7891	12-gauge Hanger Wire	Ordered Separately	Yes
<b>Perimeter Trim</b>			
7800	Angle Wall Molding	Ordered Separately	Based on Design
6481F07W1H6_ _ _	6" Veneer Trim – For Veneer Panels/Clips included	Ordered Separately	Based on Design
6481F07W1H8_ _ _	8" Veneer Trim – For Veneer Panels/Clips included	Ordered Separately	Based on Design
6603W1BL	WoodWorks Concealed Trim in Black	Ordered Separately	Based on Design
AX_VESTR_ _ _	Axiom® Vector Straight Trim – Recommended in Black	Ordered Separately	Based on Design
<b>Accessories</b>			
6408_ _ _	3/4" Veneer Edge Banding	Ordered Separately	Based on Design
5925	Replacement Trim Clip	Ordered Separately	Based on Design
7100	Heavy Duty Wall Anchor – Seismic	Ordered Separately	Yes – Seismic D,E, & F
7239	Adjustable Trim Clip (ATC)	Ordered Separately	Based on Design
BERC2	2" Beam End Retaining Clip	Ordered Separately	Based on Design
FXTBC	T-Bar Connector Clip	Ordered Separately	Based on Design
FX4SPLICE	Splice Plate with Setscrews	Ordered Separately	Based on Design
AX4SPLICE	Splice Plate with Setscrews	Ordered Separately	Based on Design
SH12	Support Hanger	Ordered Separately	Based on Design
5986	T-Bar Hook	Ordered Separately	Yes
7123PKG300	Wood Screws	Ordered Separately	Yes
6091	Safety Cable	Ordered Separately	Yes
<b>Infil Panels</b>			
8200T10	24" x 24" Fiberglass Infill Panel – Black	Ordered Separately	Based on Design
5479	24" x 24" BioAcoustic™ Infill Panel – Beige	Ordered Separately	Based on Design
5823	24" x 24" BioAcoustic Infill Panel – Black	Ordered Separately	Based on Design

♦ When specifying or ordering, please include the appropriate 3-letter color suffix (e.g., 6690F01W1 N W M).

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#### **MORE INFORMATION**

For more information, or for an Armstrong Ceilings representative, call 877 276-7876.

For complete technical information, detail drawings, CAD design assistance, installation information, and many technical services, call TechLine customer support at 877 276-7876 or FAX 800 572-TECH.

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