USG
Ceiling
Solutions

Architect: **SOM**
Photo: **Dave Burk © SOM**

USG CEILINGS PLUS® EXPANSE®

EXPANDED METAL MODULAR CEILING PANELS

INSTALLATION GUIDE

USG CEILINGSPLUS®

Introduction

Discover **EXPANSE**® - Innovative ceiling designs brought to you by **USG Ceilings Plus**. In this manual we'll show you how to perform the installation the right way, the first time. Go ahead, install with a smile..

The purpose of this installation manual is to provide you with general steps and procedures on how to properly and safely install **EXPANSE**® ceiling systems as well as how to address various field conditions.

Please read this entire manual and familiarize yourself with all procedures before you begin. If you have been supplied with project drawings specific to your order, make sure you have a thorough understanding of those. Any details within those documents will supersede this manual. Work area must be clear of debris and obstacles to ensure a safe and fast installation.

Please work safely!

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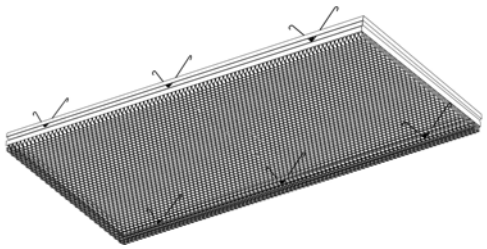
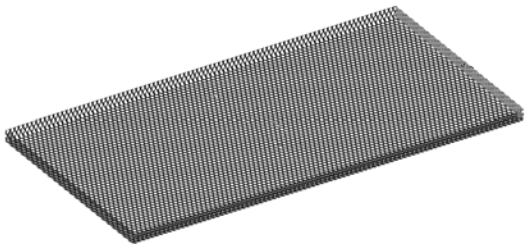
Preparation
Component Identification

Components

1. Panels

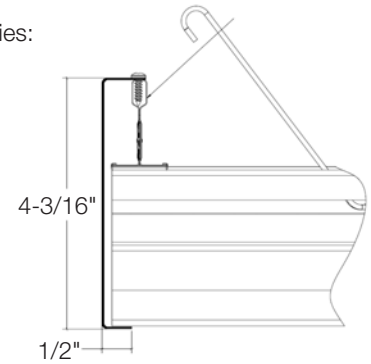


Expanse Torsion Spring Panel Assembly

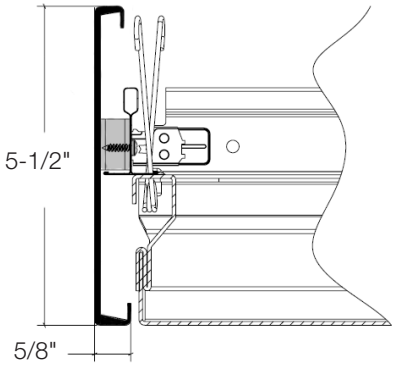


Expanse Lay-In Panel Assembly

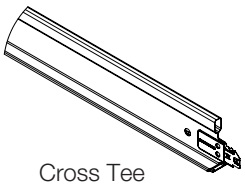
2. Parts and Accessories:



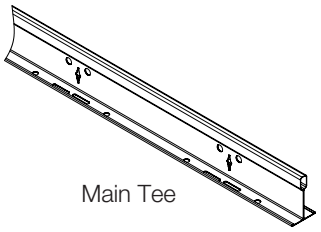
FIELD CUT PERMITER DETAILS



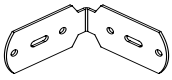
FACTORY EDGE PERMITER DETAILS



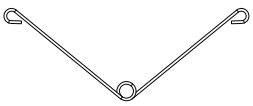
Cross Tee



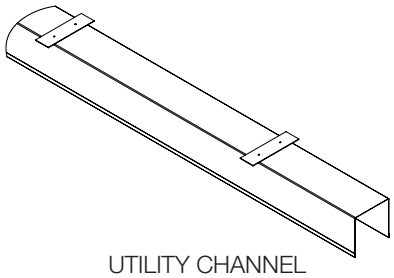
Main Tee



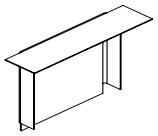
CL CLIP



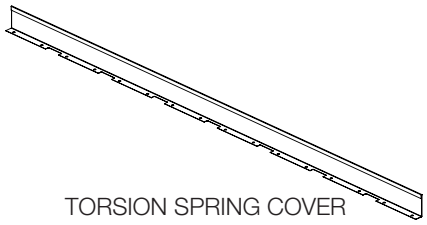
TORSION SPRING



UTILITY CHANNEL

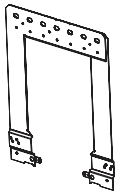


UTILITY CHANNEL CAP



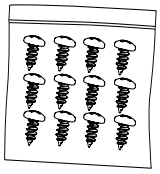
TORSION SPRING COVER

3. Hardware:

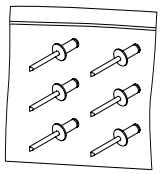


USG LOGIX UNIVERSAL YOKE

HANG WIRE



SHEET METAL SCREWS

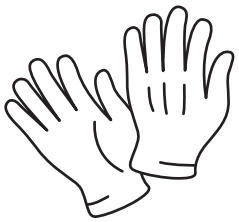


RIVETS

Standard Tools


Safety Goggles

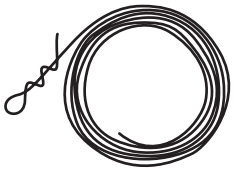

Hard Hat

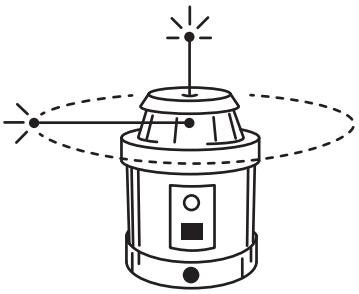

White Cotton Gloves


Tape Measure

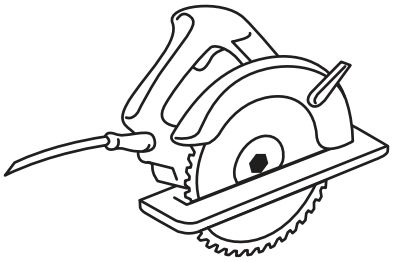

Square

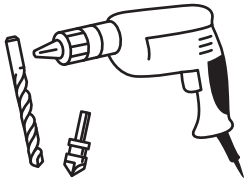

Lineman Wire Cutters


Hanger Wire

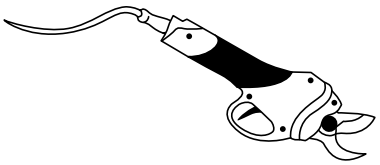

Laser Level

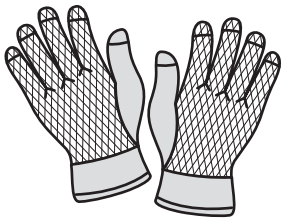
Field Modification Tools

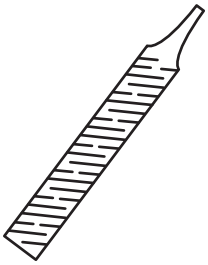

Rotary Saw

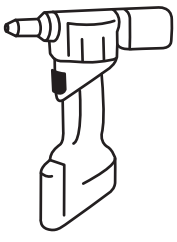

Drill with 1/8” Diameter Standard & Counter-Sink Bits

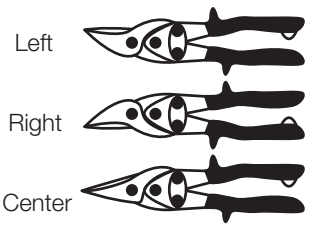

Hole Saw


Electric Shears


Working Gloves


File


Rivet Gun

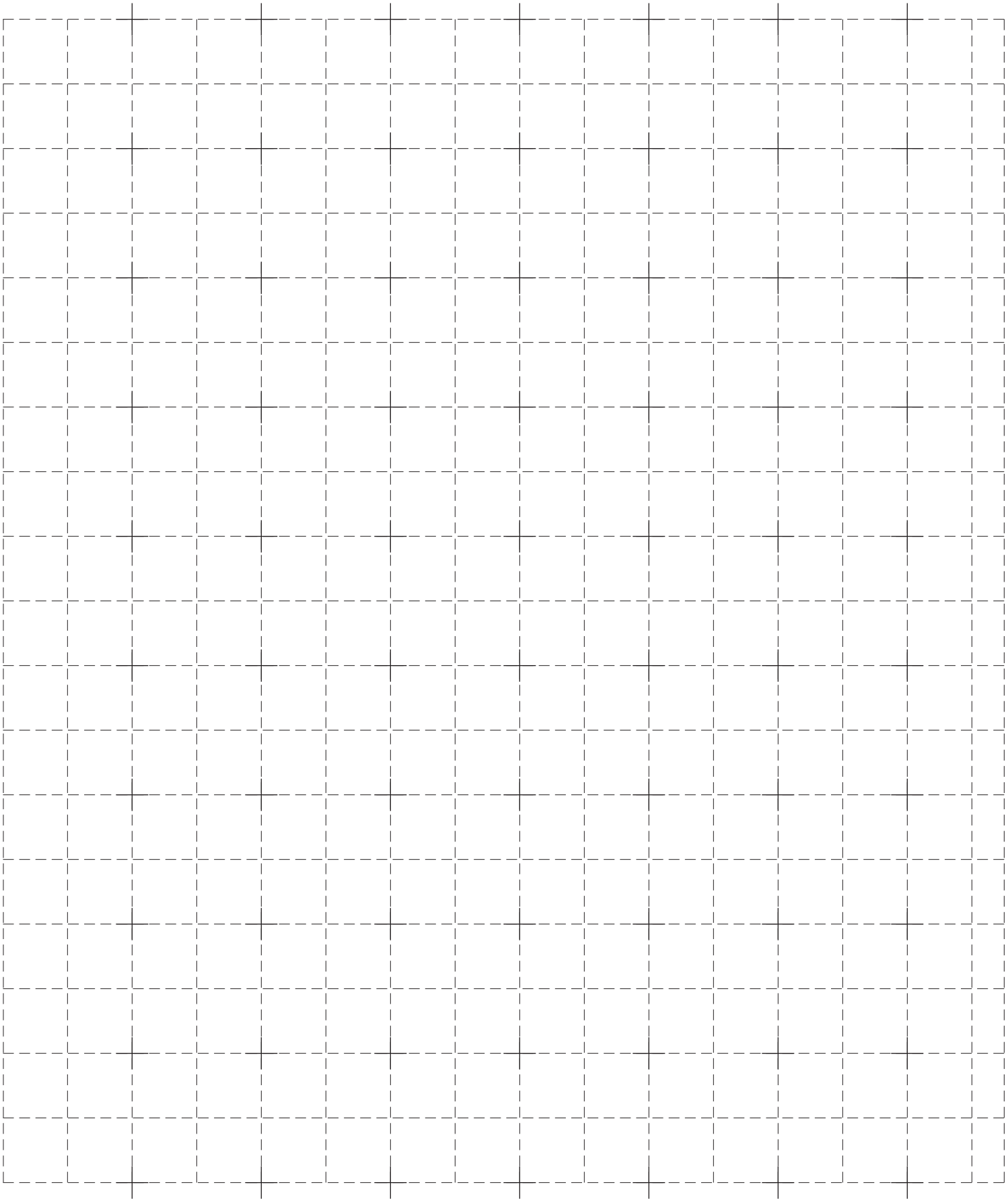


Snips

Grid Planning

Blank Grid

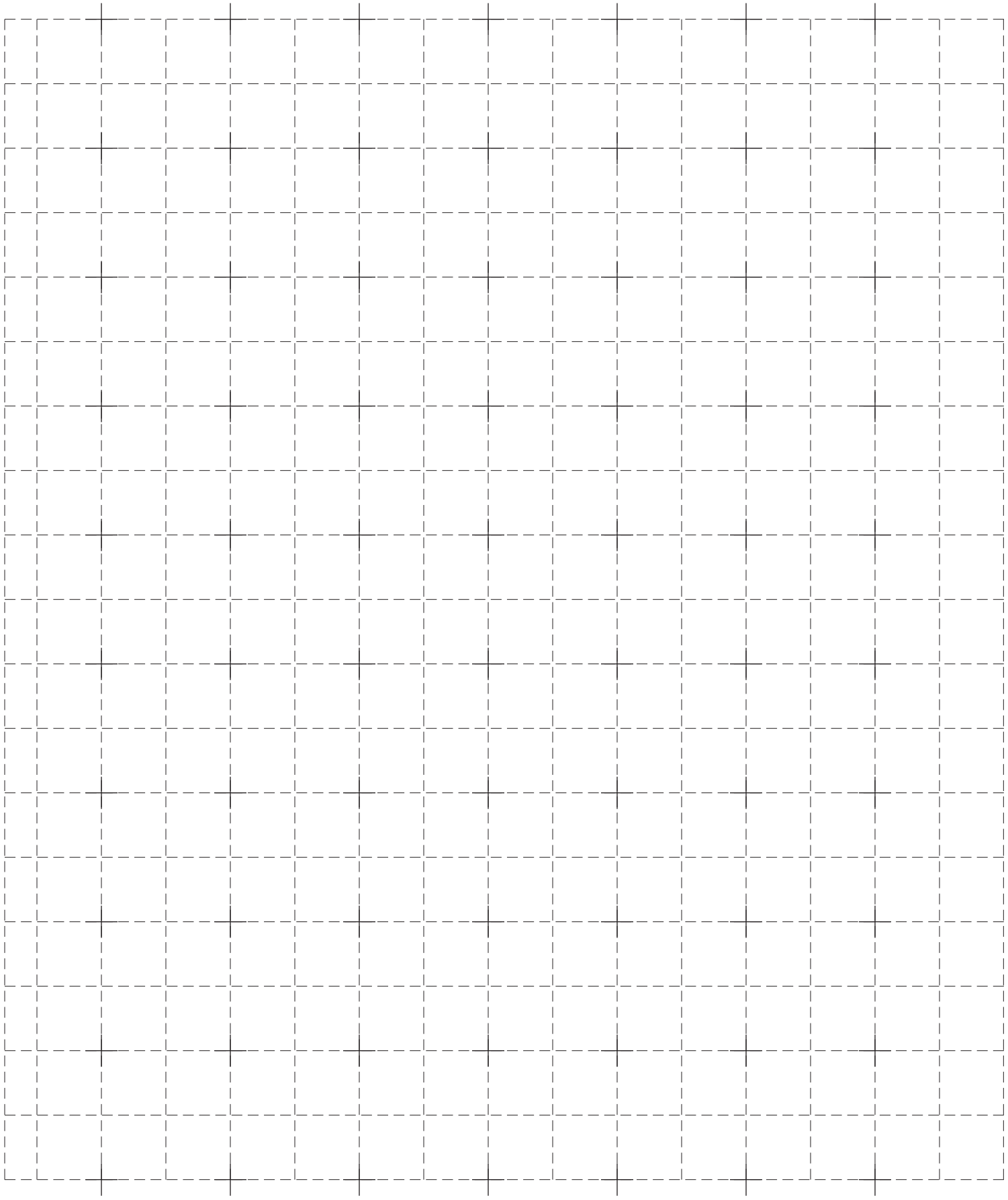
Crosses @ 4’℄ ,Dashed Lines @ 2’℄



Grid Planning

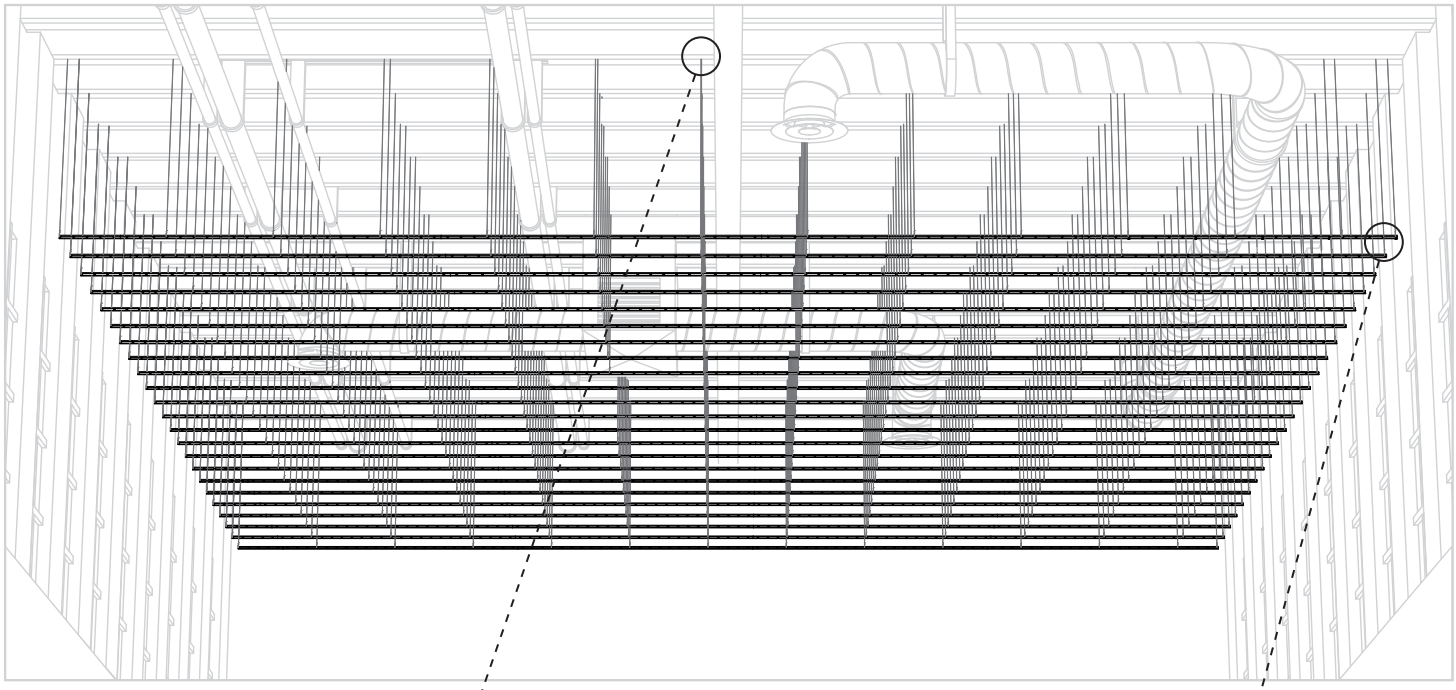
Blank Grid

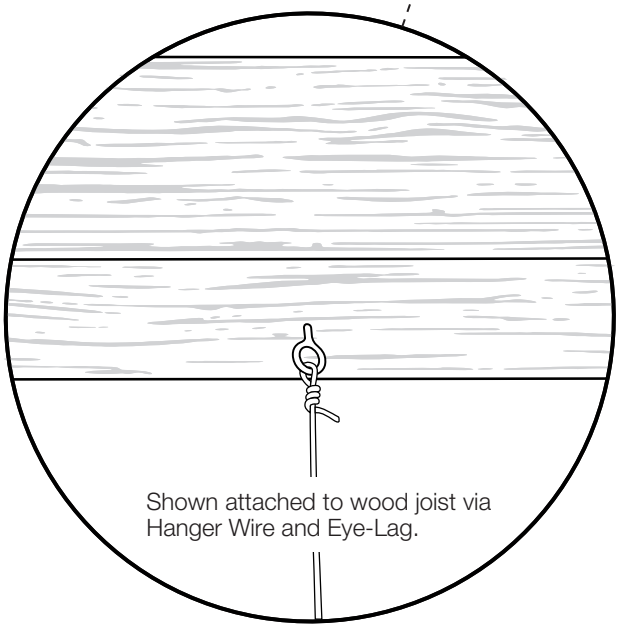
Crosses @ 4’℄ ,Dashed Lines @ 2’℄

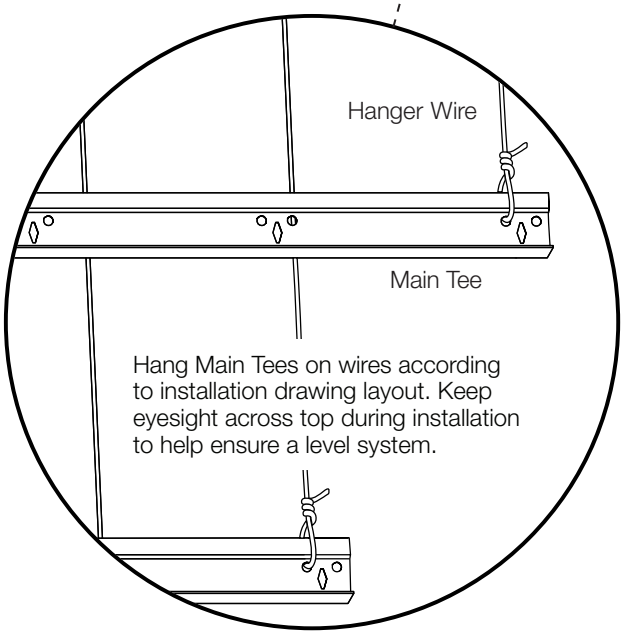


General Installation

Install Hanger Wire & Main Tees

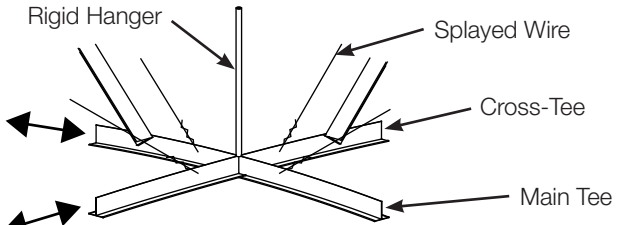






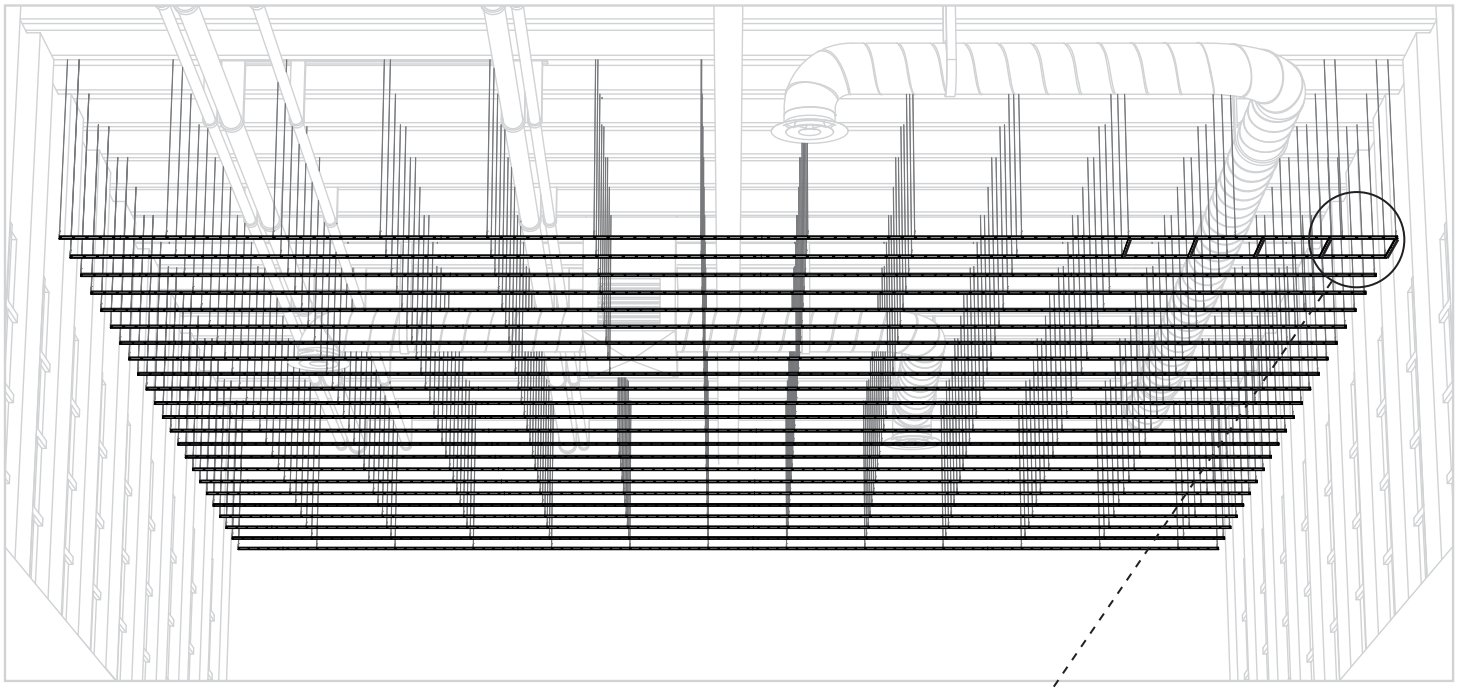
Install per ASTM C636 and ASTM E580 specifications. Select the correct fastener based on your field conditions, i.e. shot-in pin, anchor bolts, screw/clip, etc.

Install additional bracing required for project's seismic codes. Lateral bracing wires/compression posts. For lateral bracing, counter-splayed wires or diagonal bracing are required for each direction.

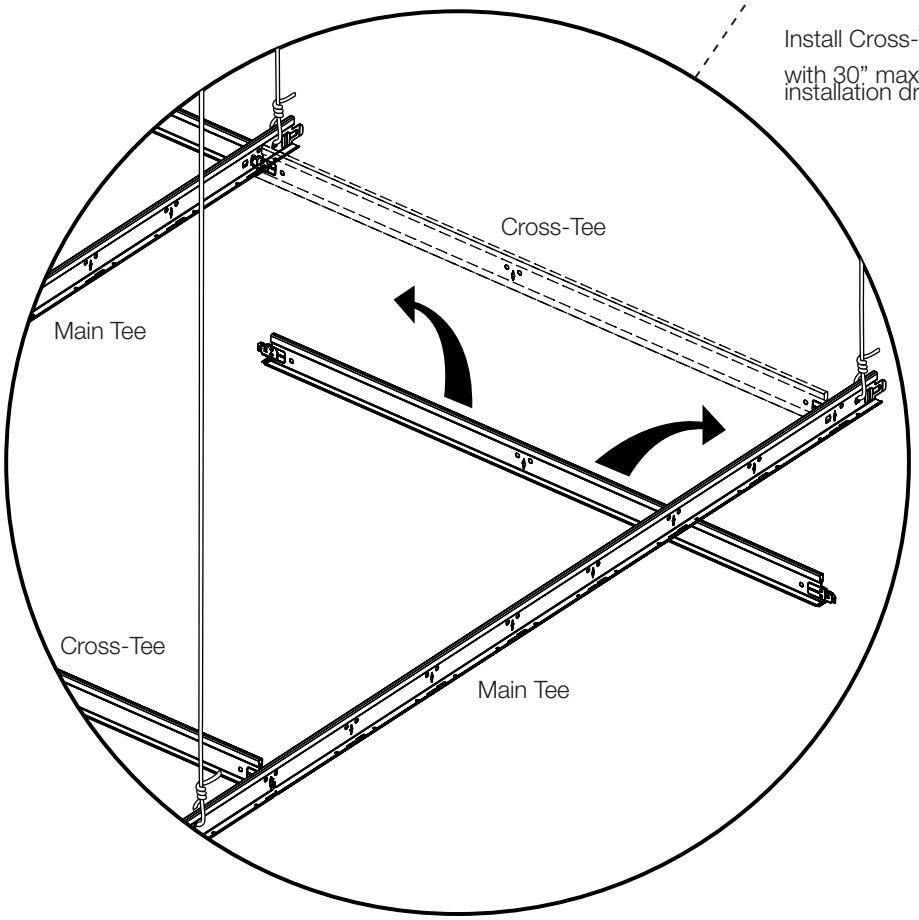


LATERAL BRACING

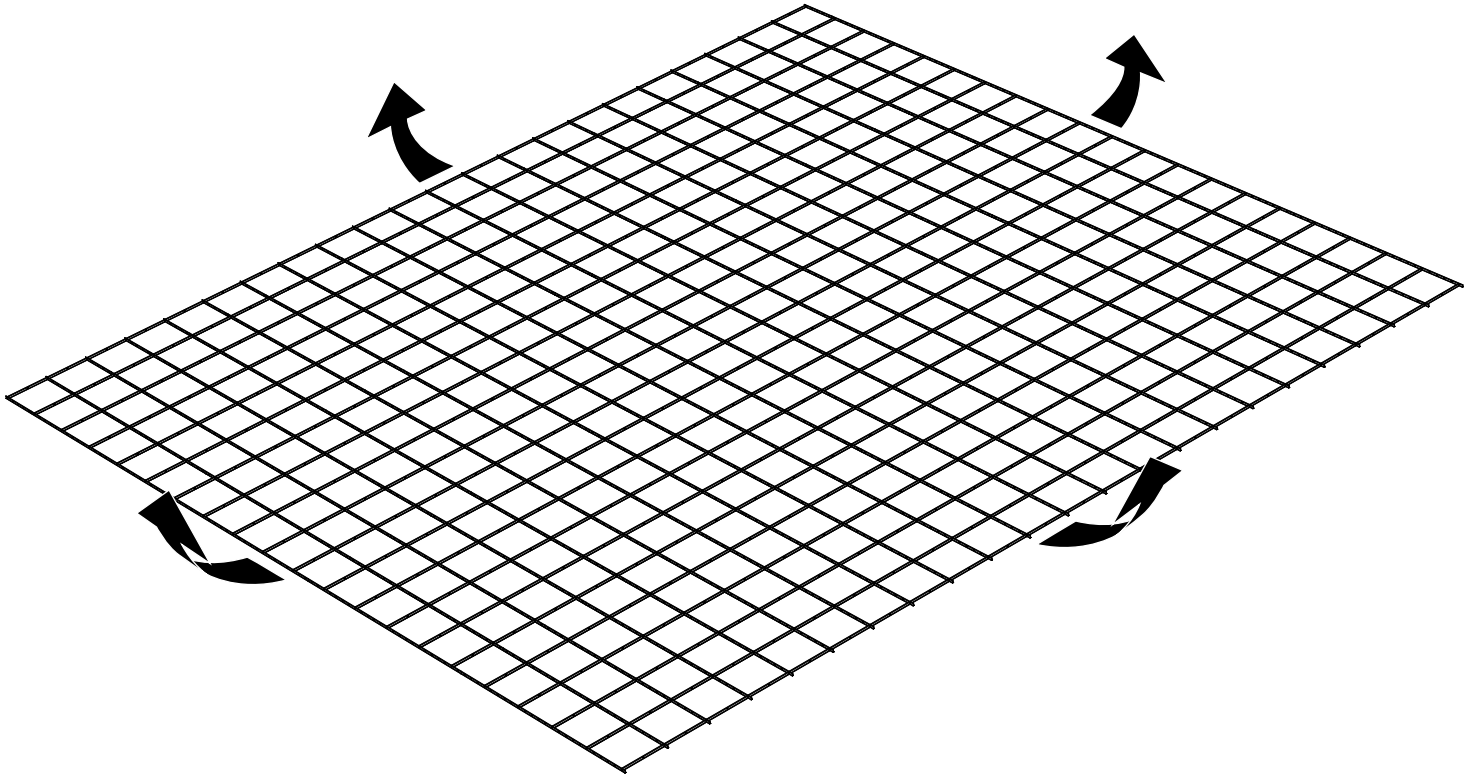
General Installation
Install Cross Tees



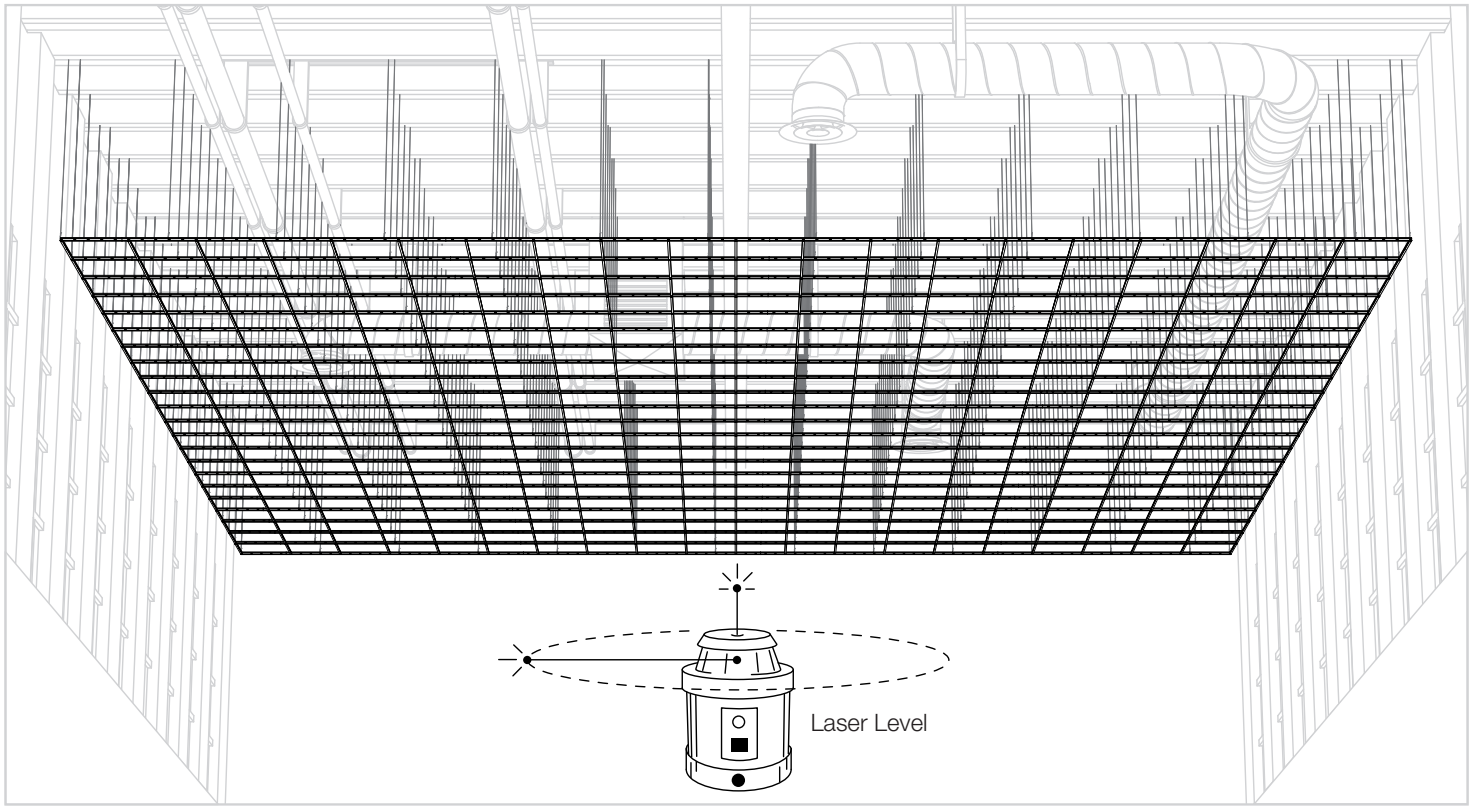
Install Cross-Tees between Main Tees with 30” maximum ℄ spacing. Follow installation drawing layout.



General Installation
Level Grid System



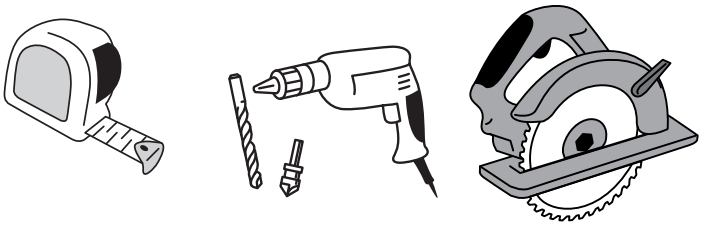
Use laser level to ensure whole grid is leveled to a 1/8” maximum variance.



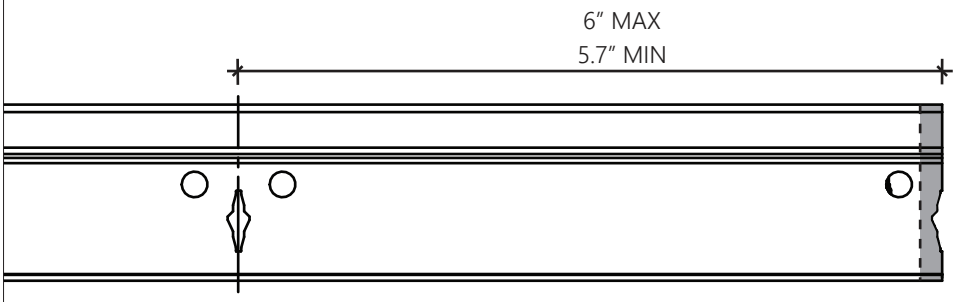
Step 1

PREPARE EDGE CONDITION FOR MAIN TEE'S

A) Mark and trim **main tee** rails in area shown.
B) Debur any sharp edges.

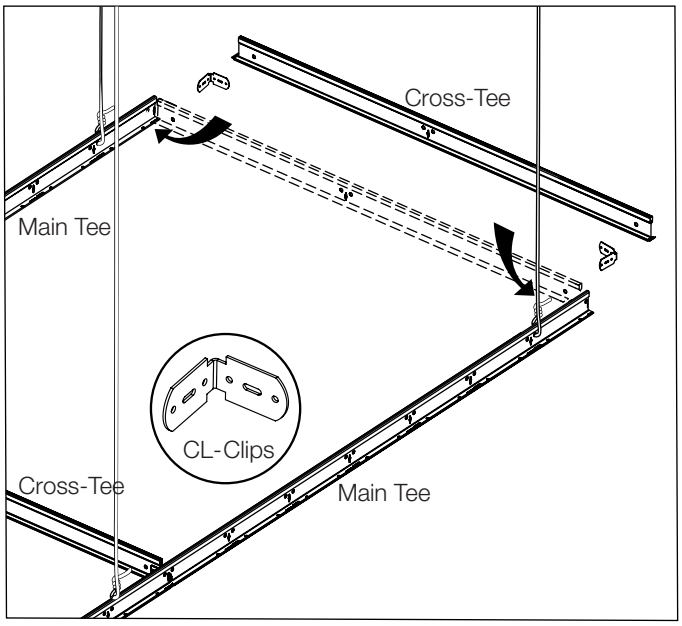


SUGGESTED TOOLS



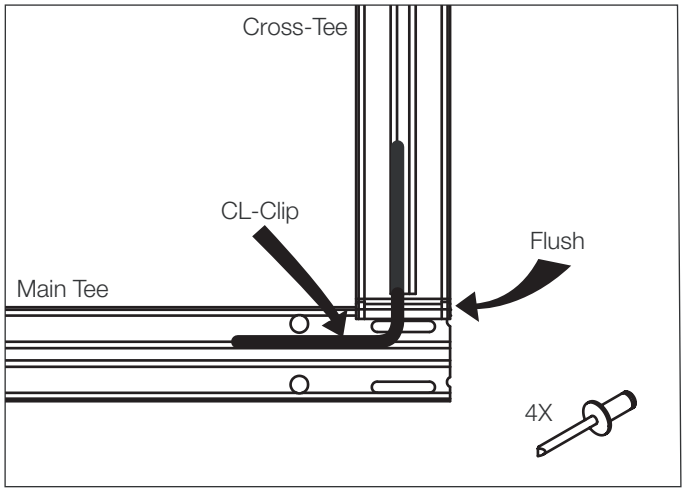
Step 2

Fit in place cross-tee up to main tee.
Position CL-Clips against main Tee's



Step 3

Make sure cross-tee and main-tee are flush along outside trimmed edge. Align CL-Clip in place. **Mark rivet hole location through CL-Clip onto tee's.** Drill using 1/8" diameter drill bit. Clean drilled hole using counter-sink debur tool.

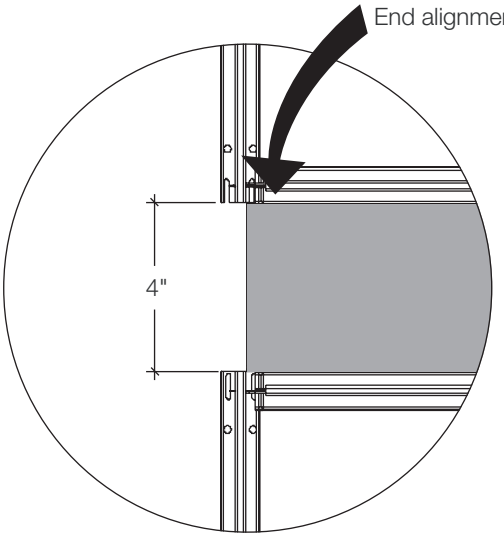


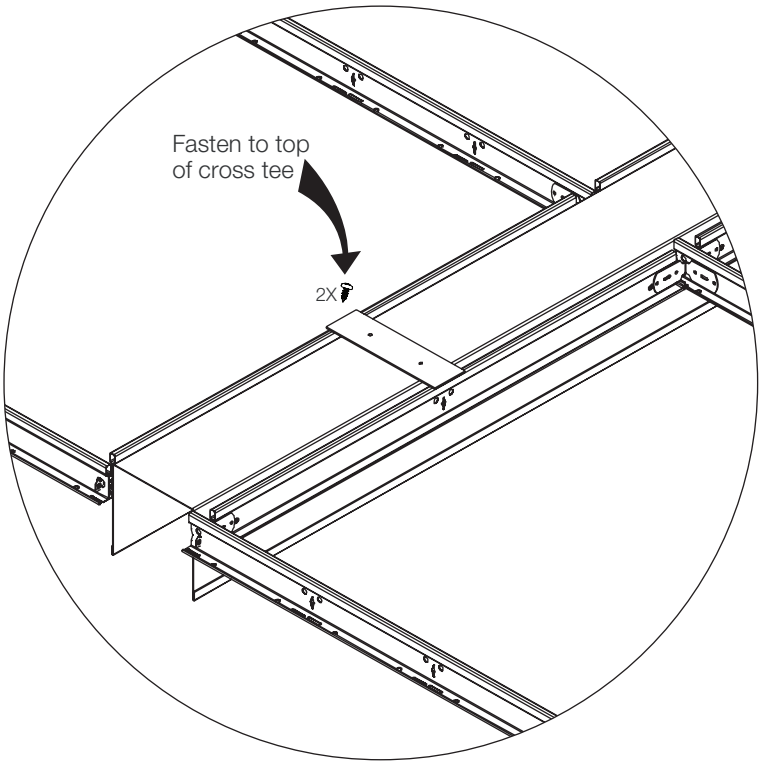
Step 4

Fasten CL-Clip in place using rivets.
4 rivets required per CL-Clip.

Step 5

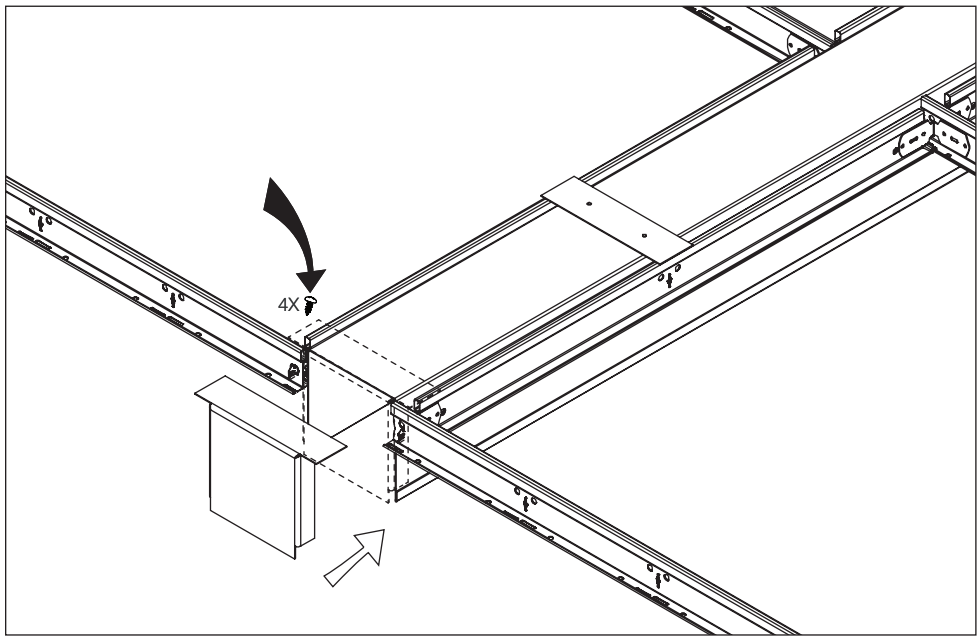
Align utility channel assembly to top of grid assembly. Slide end of utility channel to centerline of main tee as shown. Fasten utility channel to cross tees through utility channel mounting brackets.



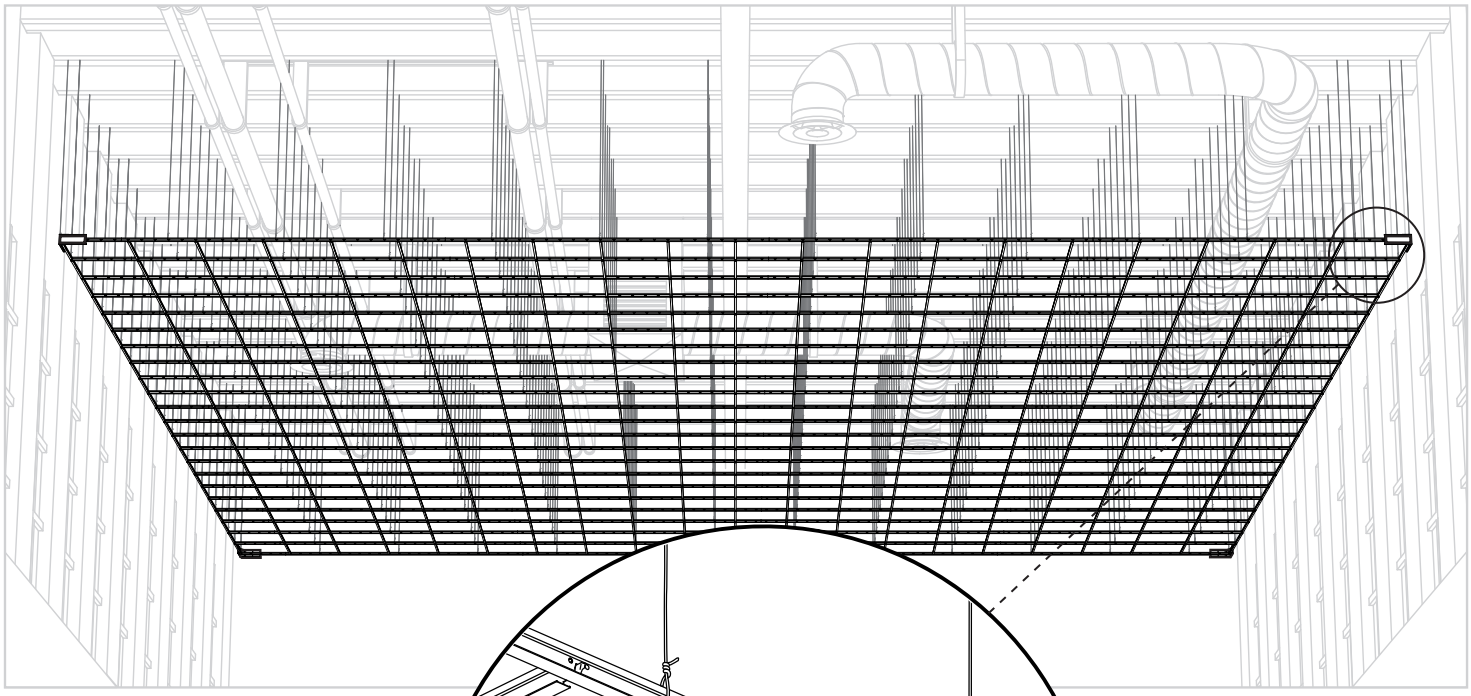


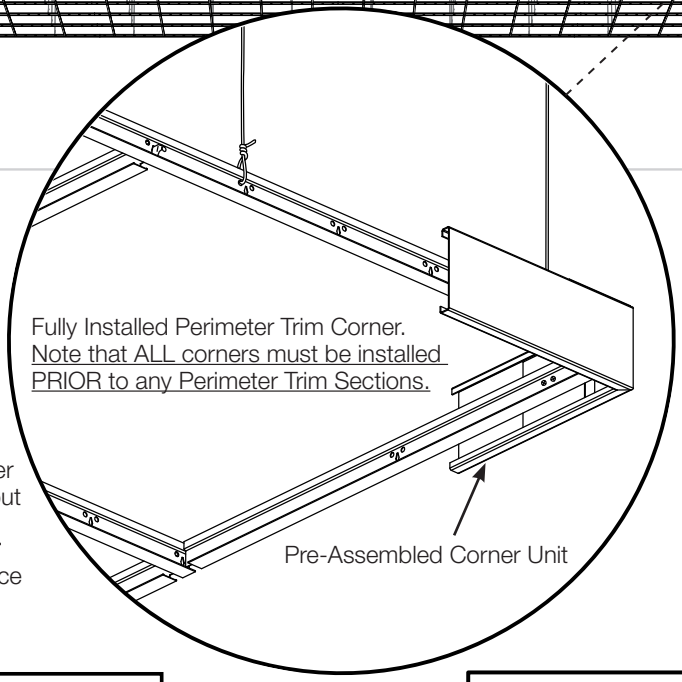
Step 6

Install utility channel cap to end of the utility channel. Slide cap flash to utility channel, fasten in place using screws into cross tee and main tee.



General Installation
Install Perimeter Trim Corner Units





Step 1

PREPARE PRE-ASSEMBLED CORNER TRIM UNIT

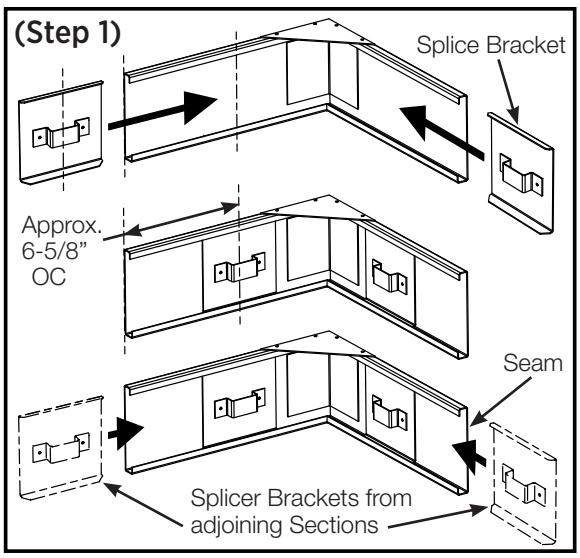
A) Insert and slide Splicer Brackets into place at each end of the assembled Corner Unit to approximately 6-5/8" OC from edge. Horizontal positions of Splicer Brackets may be adjusted as needed, but noting that other **Splicer Brackets from adjoining Sections will occupy area over Seams On Center** and will need clearance (see next page for this detail).

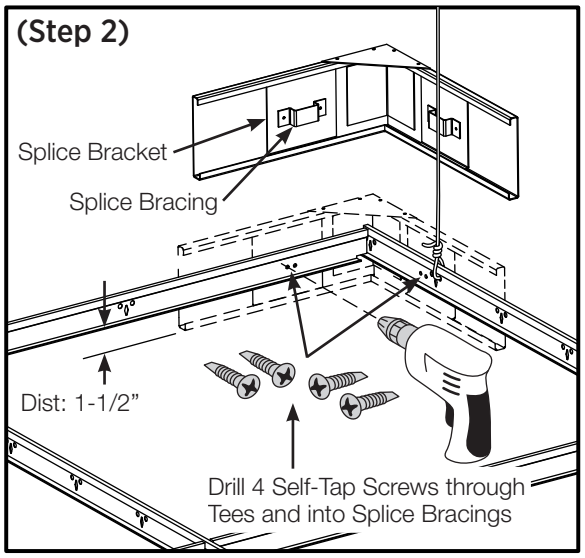
Step 2

MOUNT CORNER TRIM UNIT

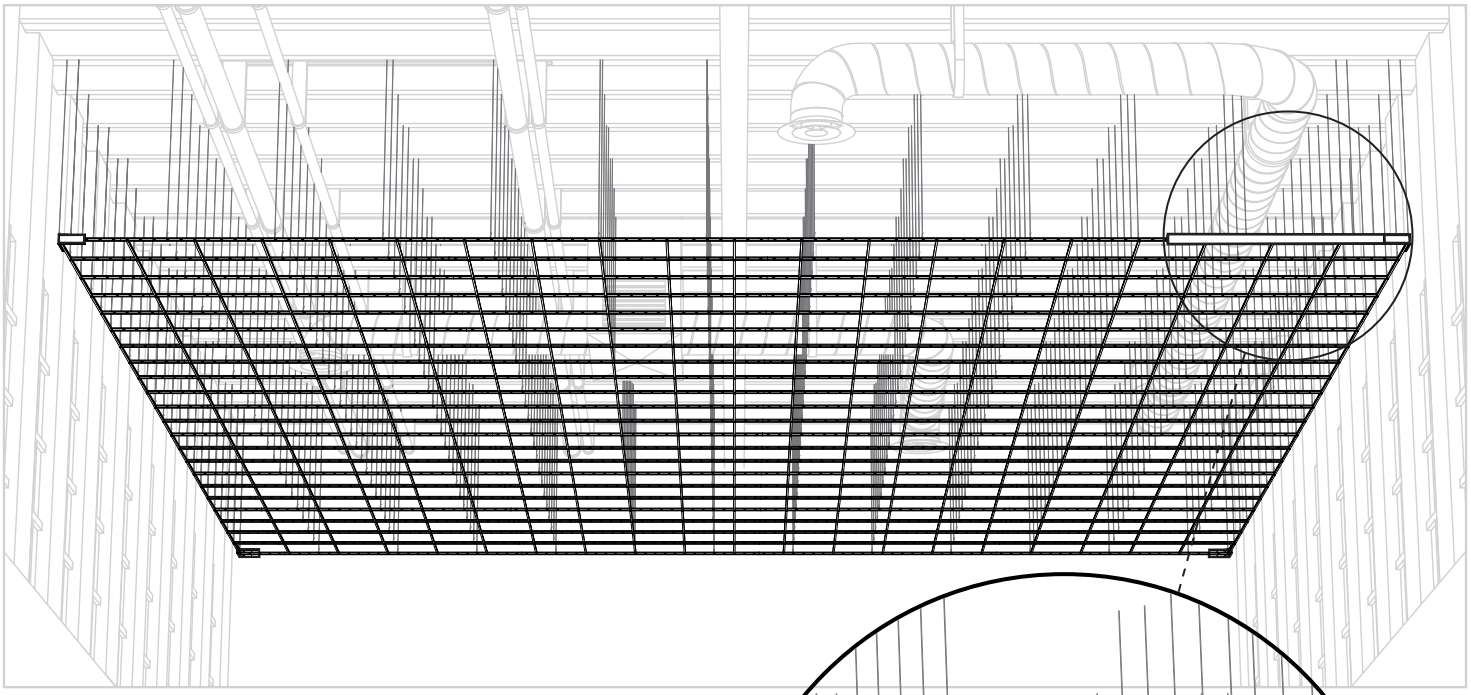
A) Align assembled Corner Trim Unit with Tees as shown below and hold in place at 1-1/2" down from bottom of Tee to bottom of Corner Unit.

B) Using 4 Self-Tap Screws, fasten Splicer Bracing to Tees.



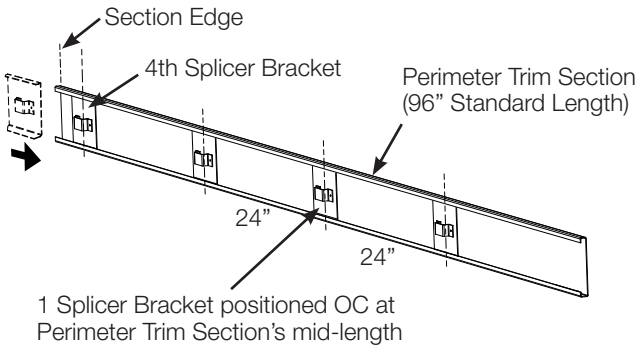


General Installation
Install Corner-Adjacent Trim Sections

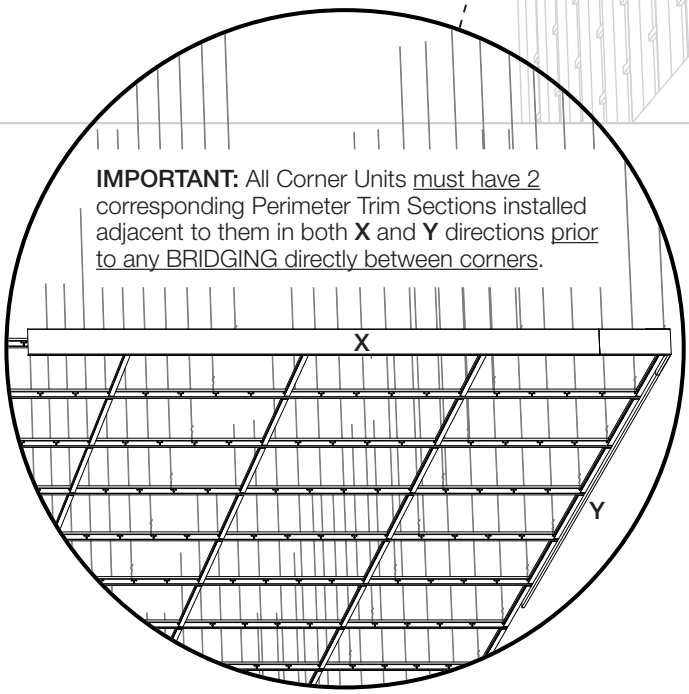


PREPARE PERIMETER TRIM SECTION

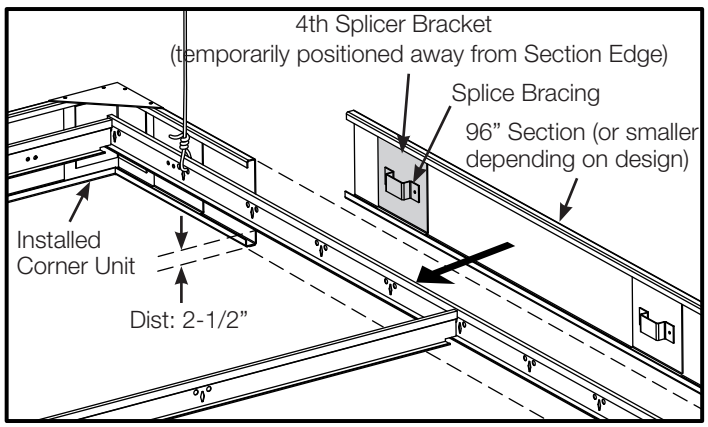
A) Insert 3 Splicer Brackets and slide into place with 1 positioned at center of Trim Section's total length and 1 on each side of it, spaced at 24" OC. Insert a 4th bracket, temporarily positioning it in and away from the Section Edge during alignment with Tees/Grid.



IMPORTANT: All Corner Units must have 2 corresponding Perimeter Trim Sections installed adjacent to them in both **X** and **Y** directions prior to any BRIDGING directly between corners.

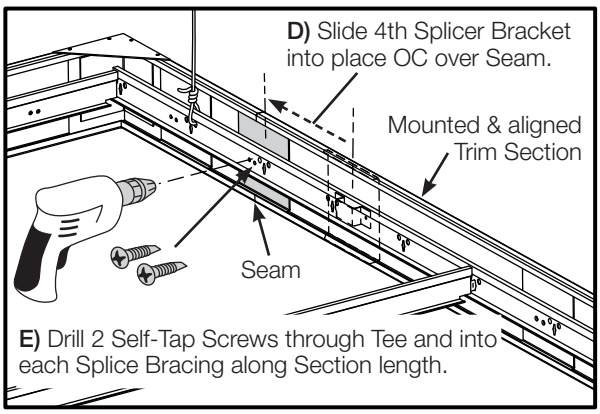


B) Align Perimeter Trim Section with Tee and hold in place at 1-1/2" down from bottom of Tee to bottom of Trim Section body.



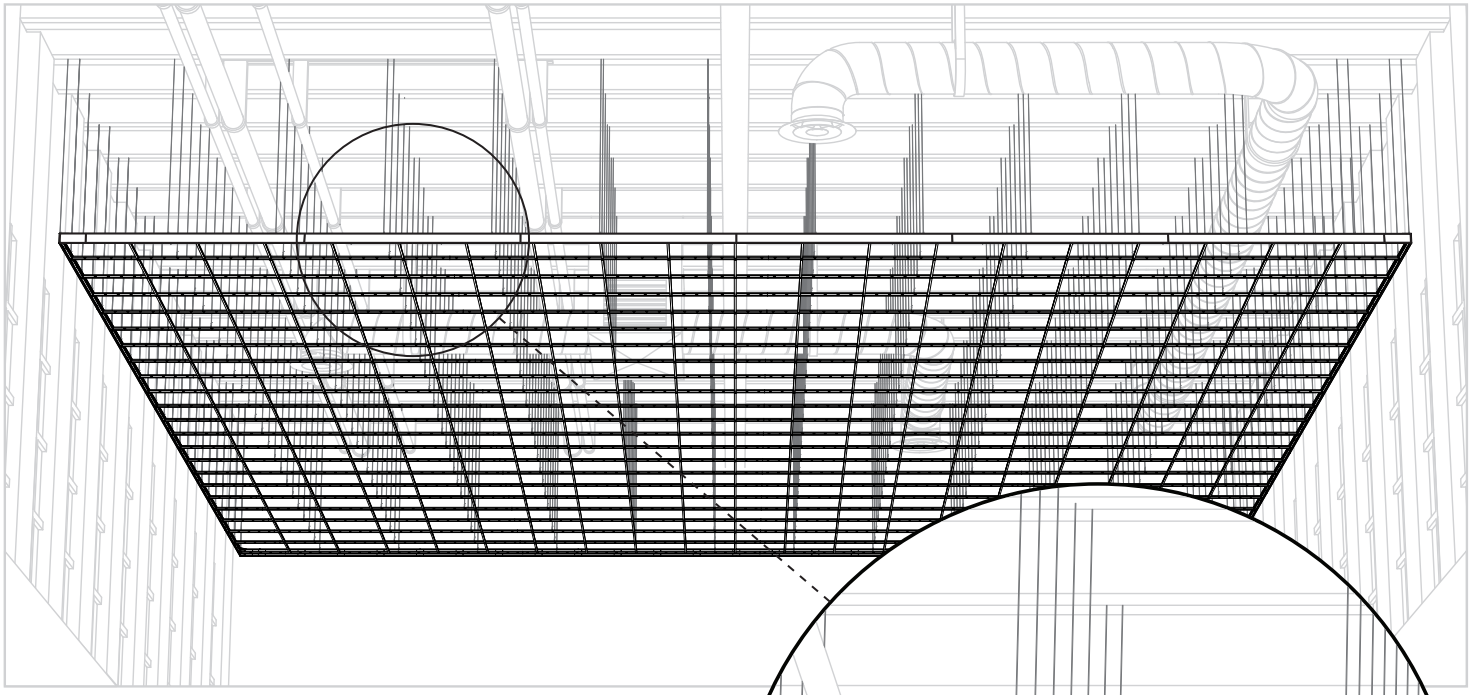
C) Fasten Splicer Bracing to Tees. Horizontal position of all Splicer Brackets may be adjusted as needed.

Repeat Steps A through E on **X** & **Y**



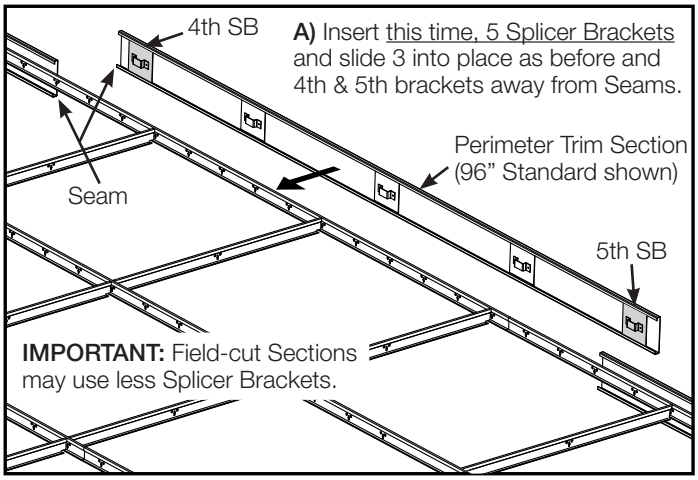
General Installation

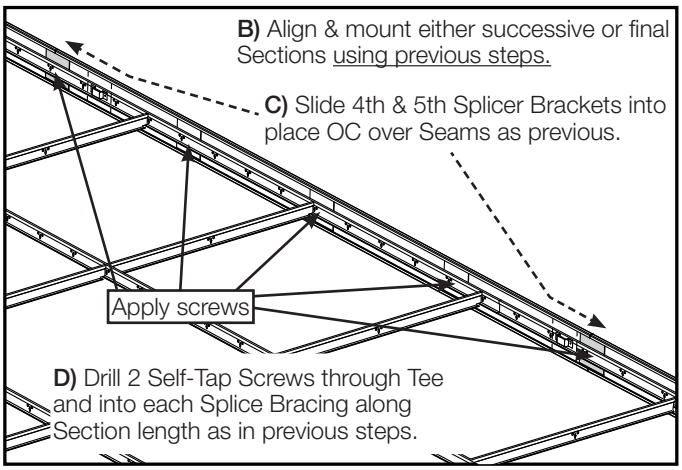
Install Successive & Final Trim Sections

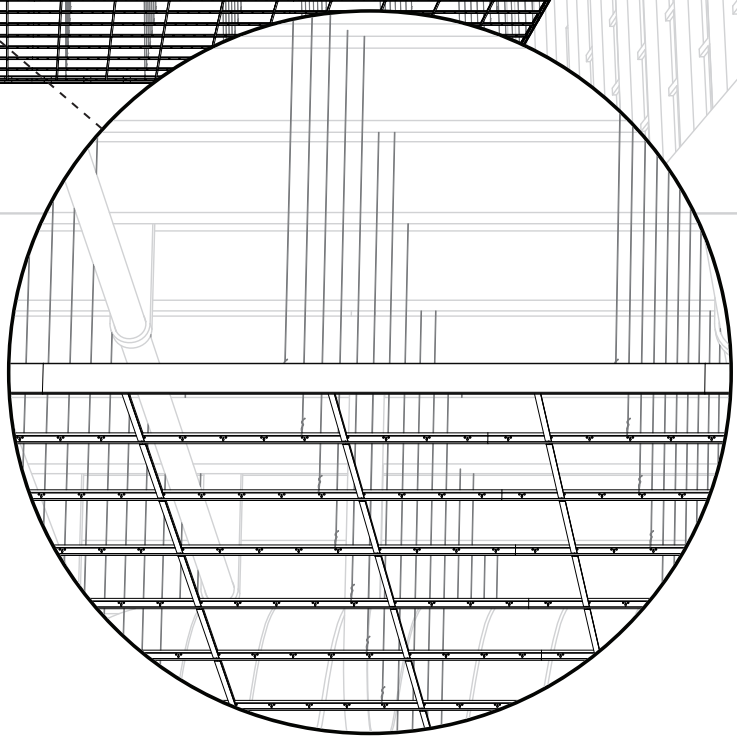


MOUNTING BRIDGE SECTIONS

NOTE: Image below may represent a “successive”, a “final”, or a “Field-Cut” Section mounting procedure (same rules apply). See Diagram 1.1 for field-cut operation.

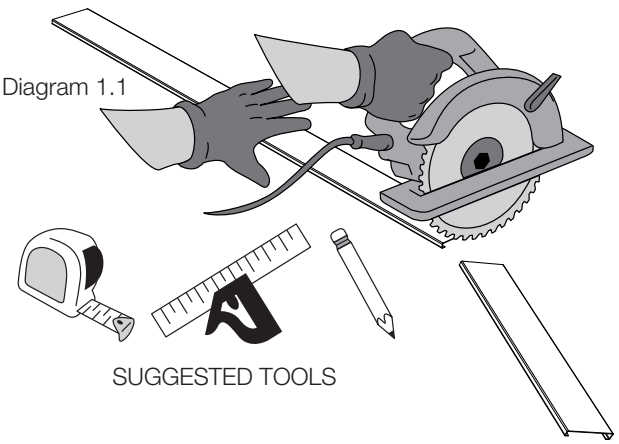






FIELD-CUTTING OPERATION: Measure, mark, & cut.
Minimum length for Field-Cut Sections is 6”.

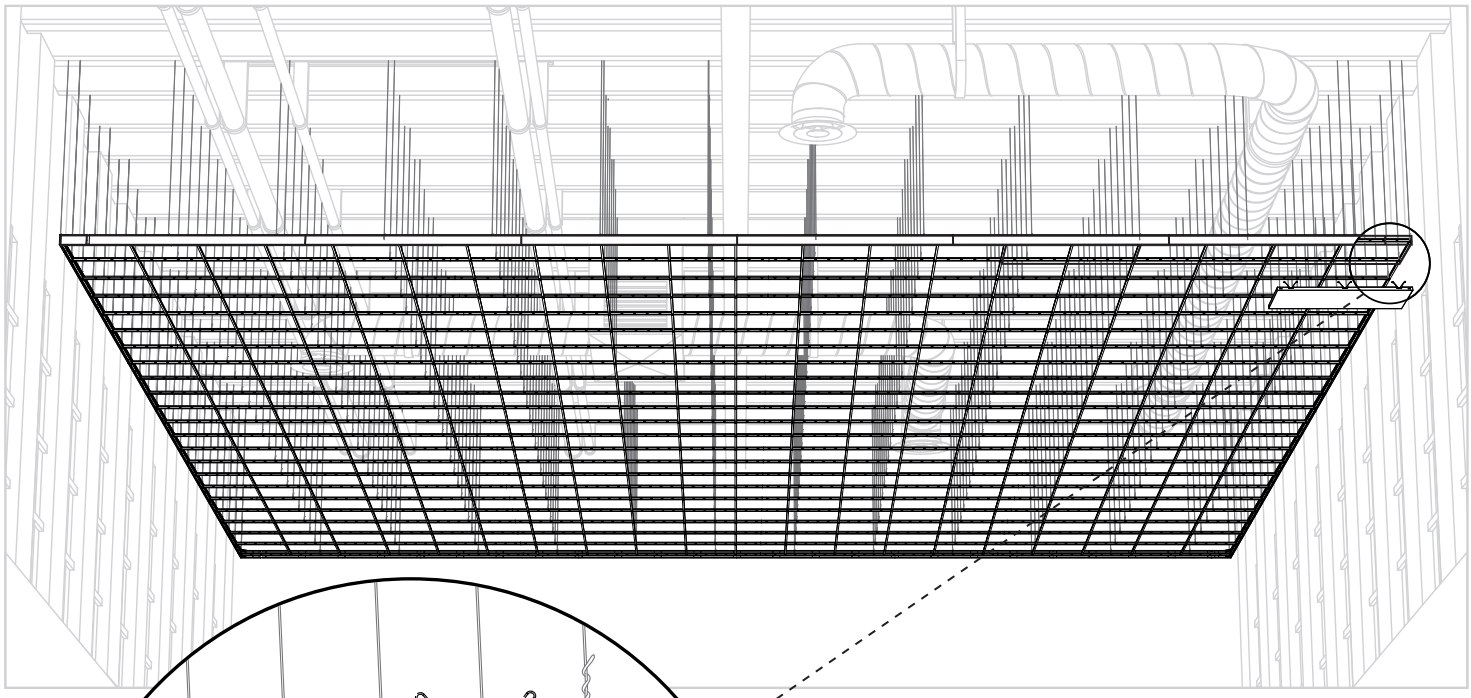
Diagram 1.1

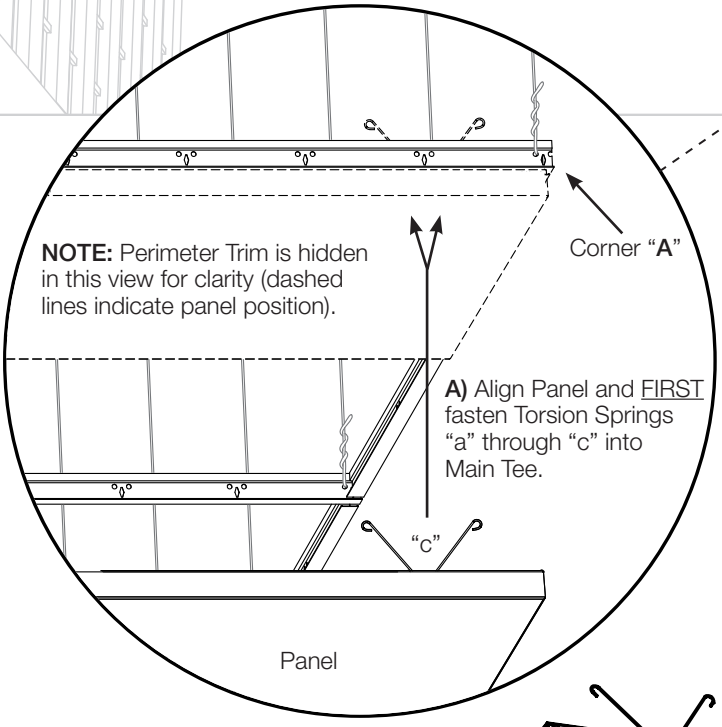


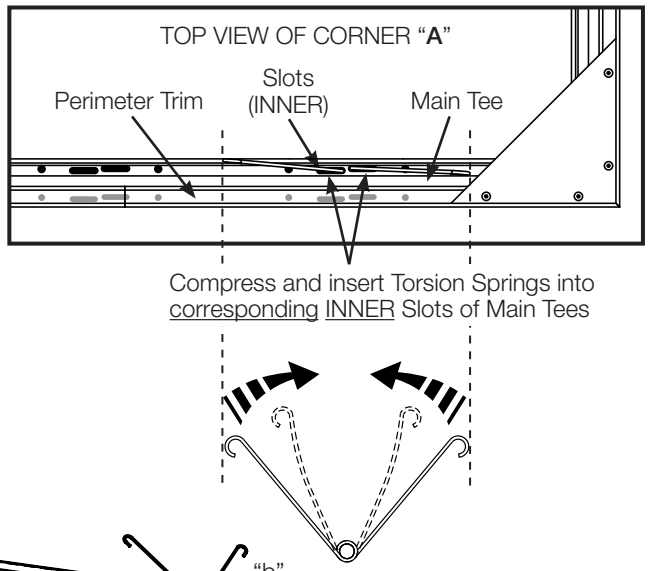
SUGGESTED TOOLS

General Installation

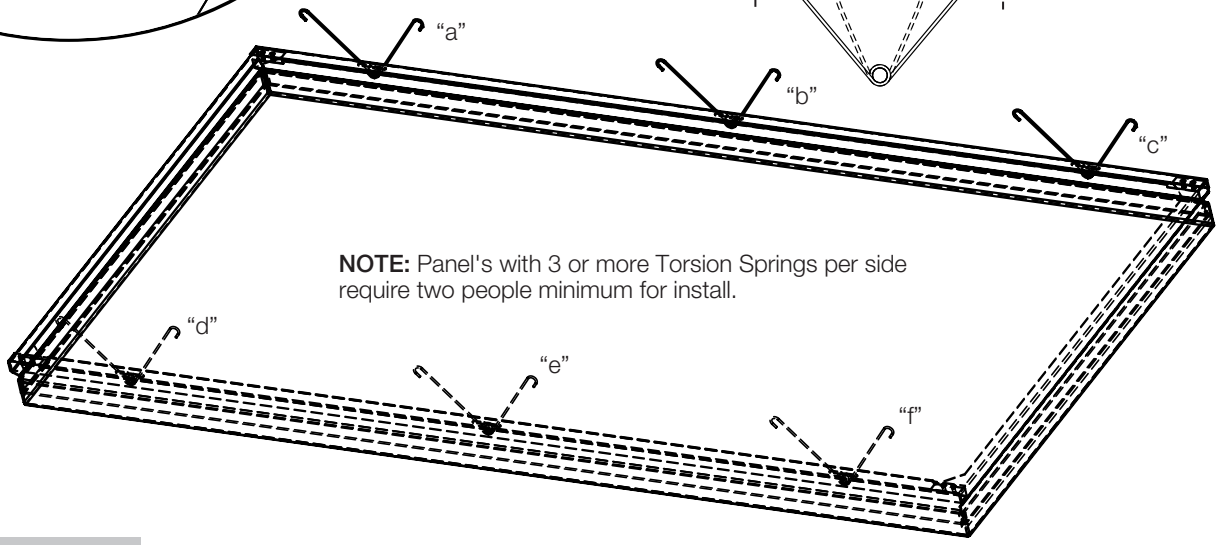
Install Expanse Panels





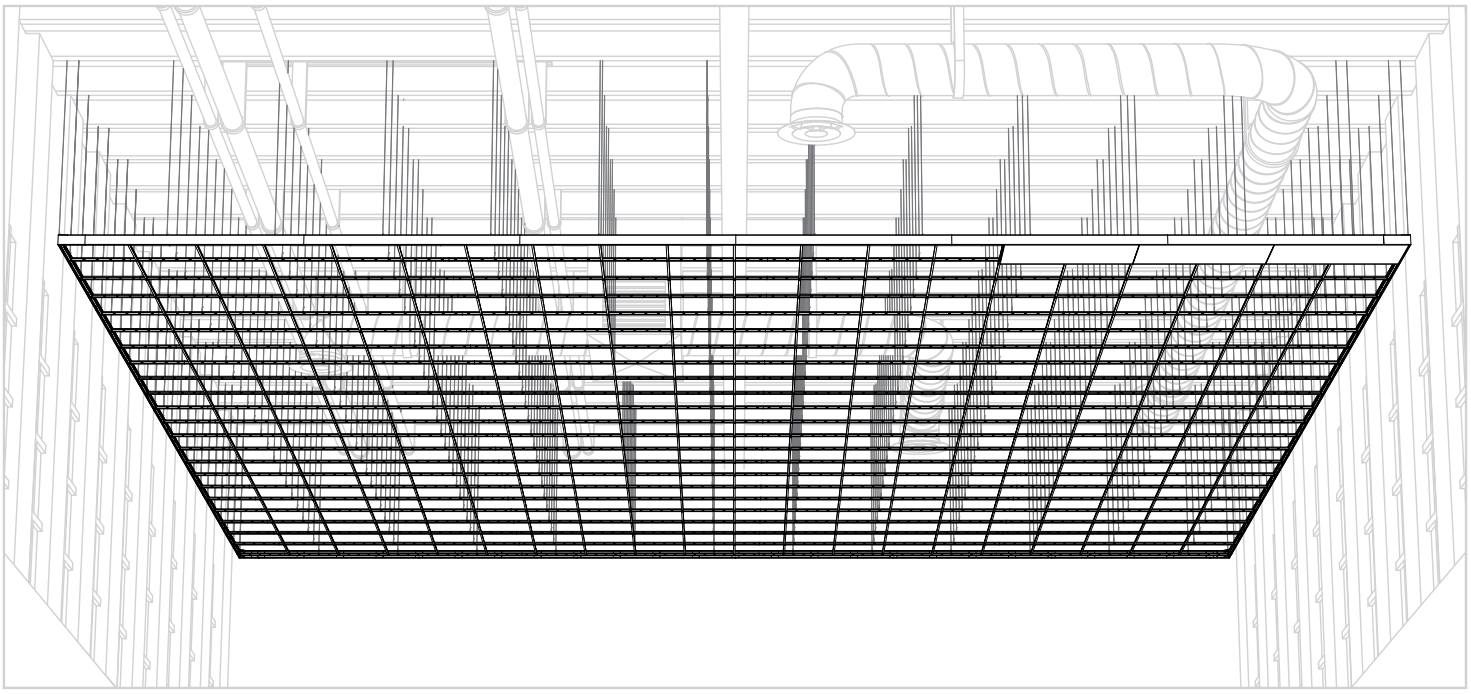


B) Swing Panel up, then fasten Torsion Springs "d" through "f" into Main Tee all at once.



General Installation

Install Remaining Expanse Panels

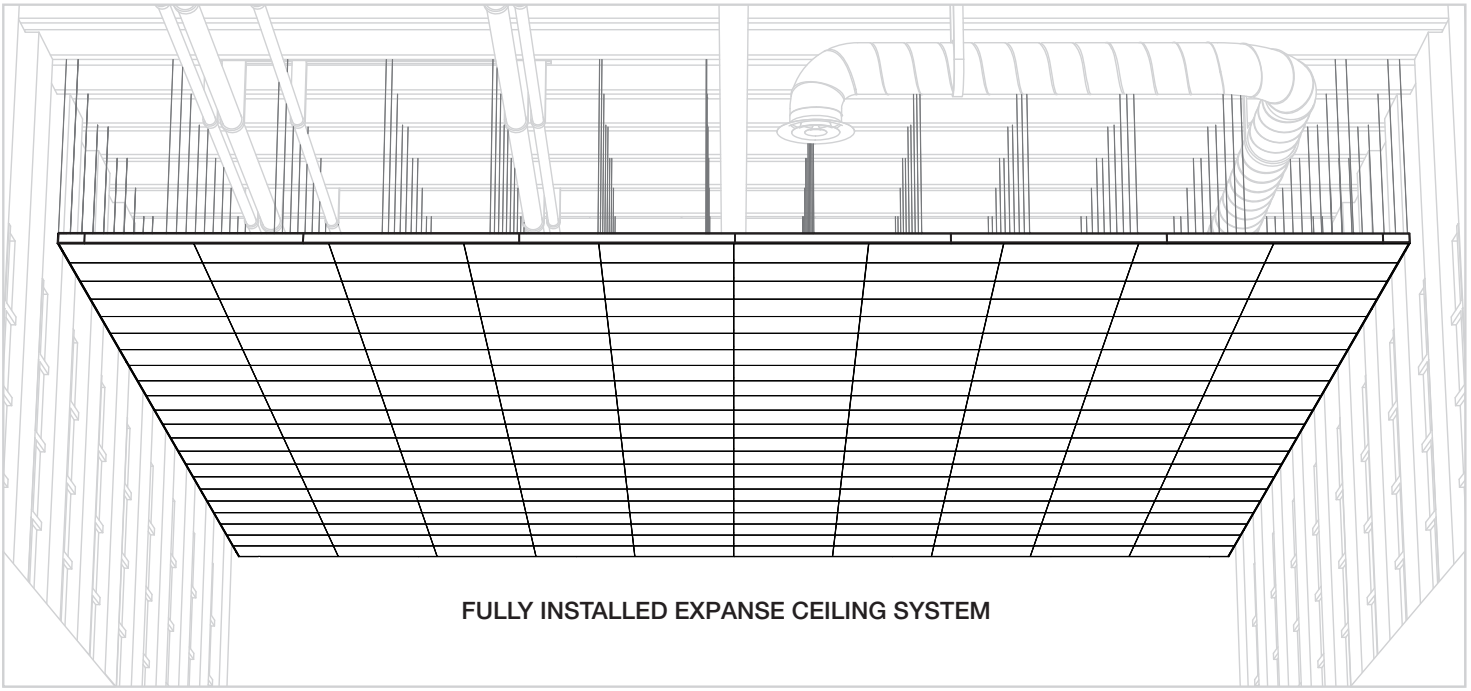


C) Continue installing **all successive Panels adjacent to Perimeter Trim** using previous procedures.

D) Once **all** perimeter-adjacent panels have been installed, proceed with with next round of panels, working inward towards center. **NOTE:** It is important to work from perimeter to center, to prevent fastening of Torsion Springs to incorrect Slots. Working inward will make clear which row of slots is next.

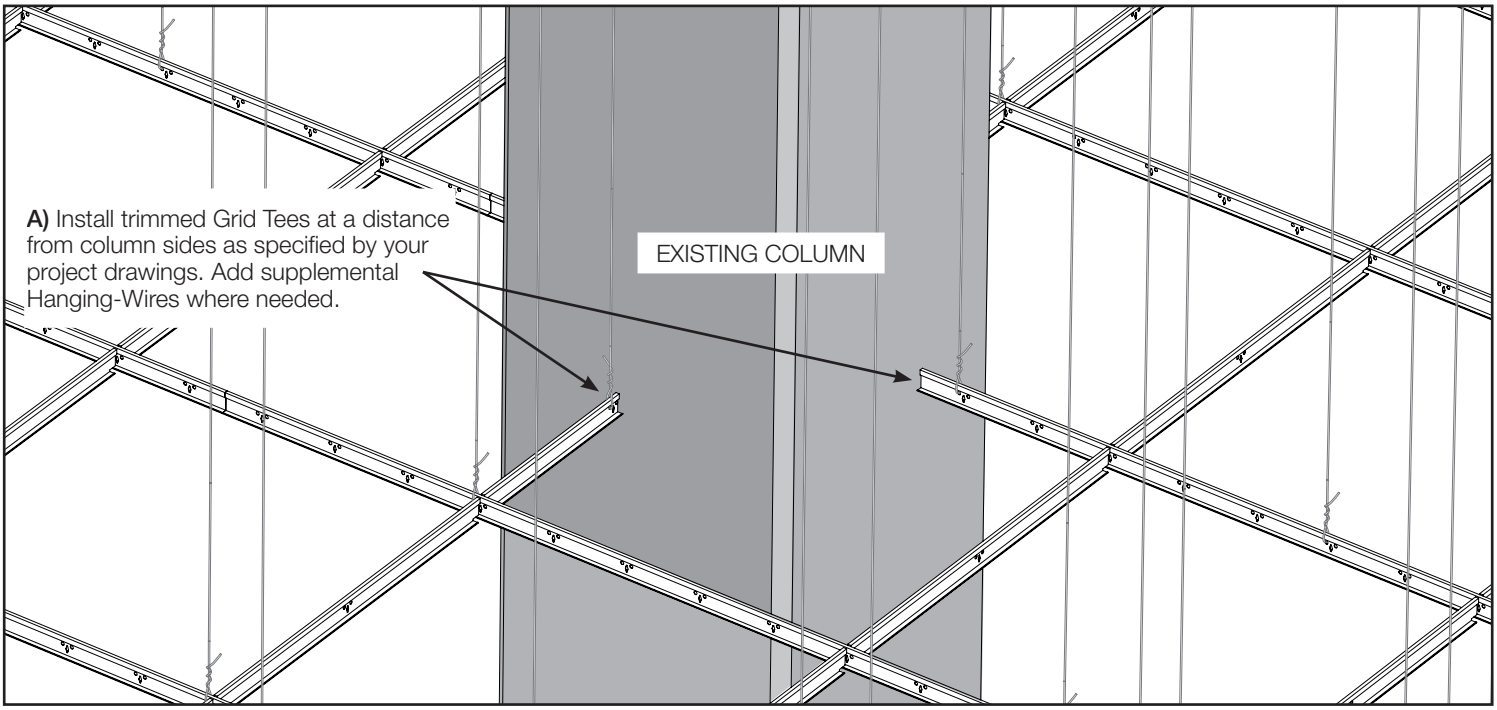
E) INSPECT INSTALLATION:

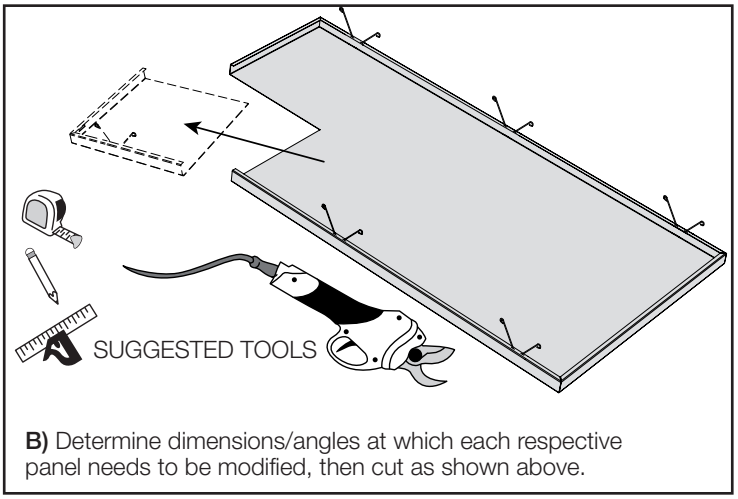
- Make sure all hanging-wire and supports are properly connected.
- Make sure grid is leveled.
- Check for any scratches and smudges and address accordingly.
- Sign off.

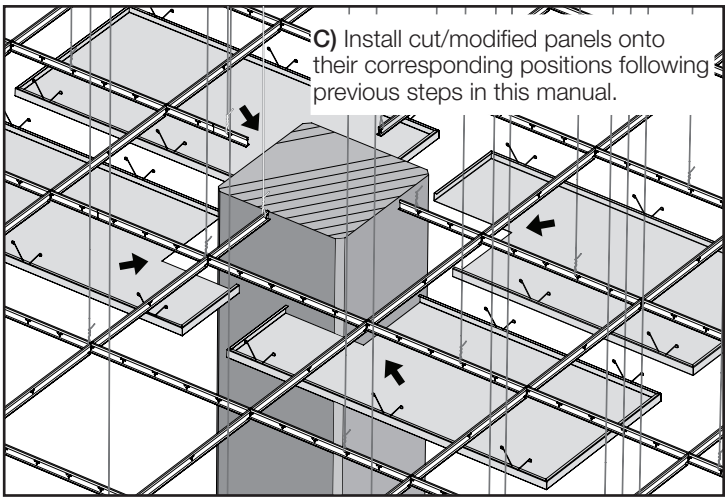


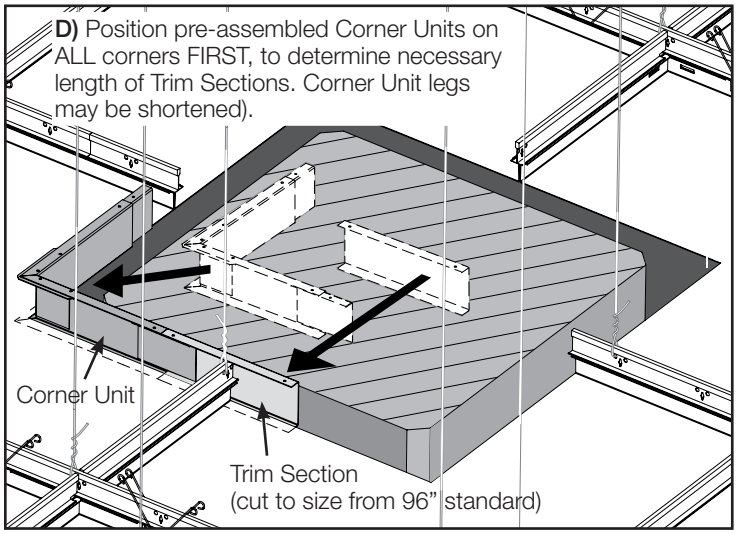
FULLY INSTALLED EXPANSE CEILING SYSTEM

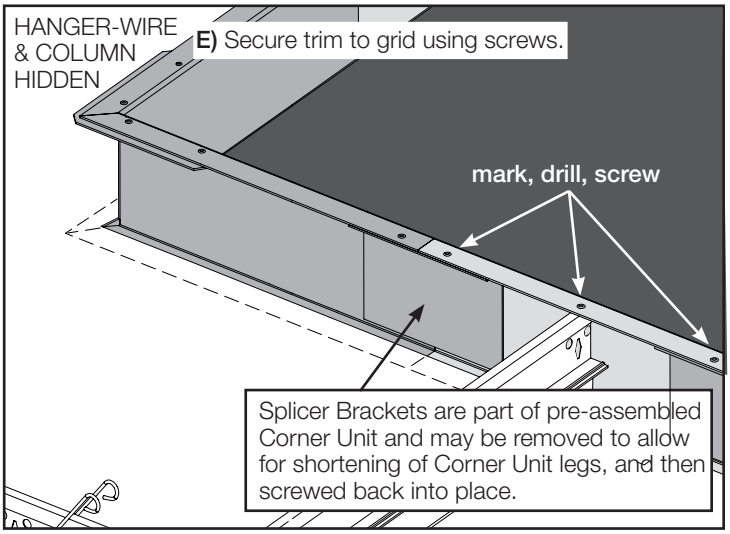
Perimeter Conditions
Column Integration





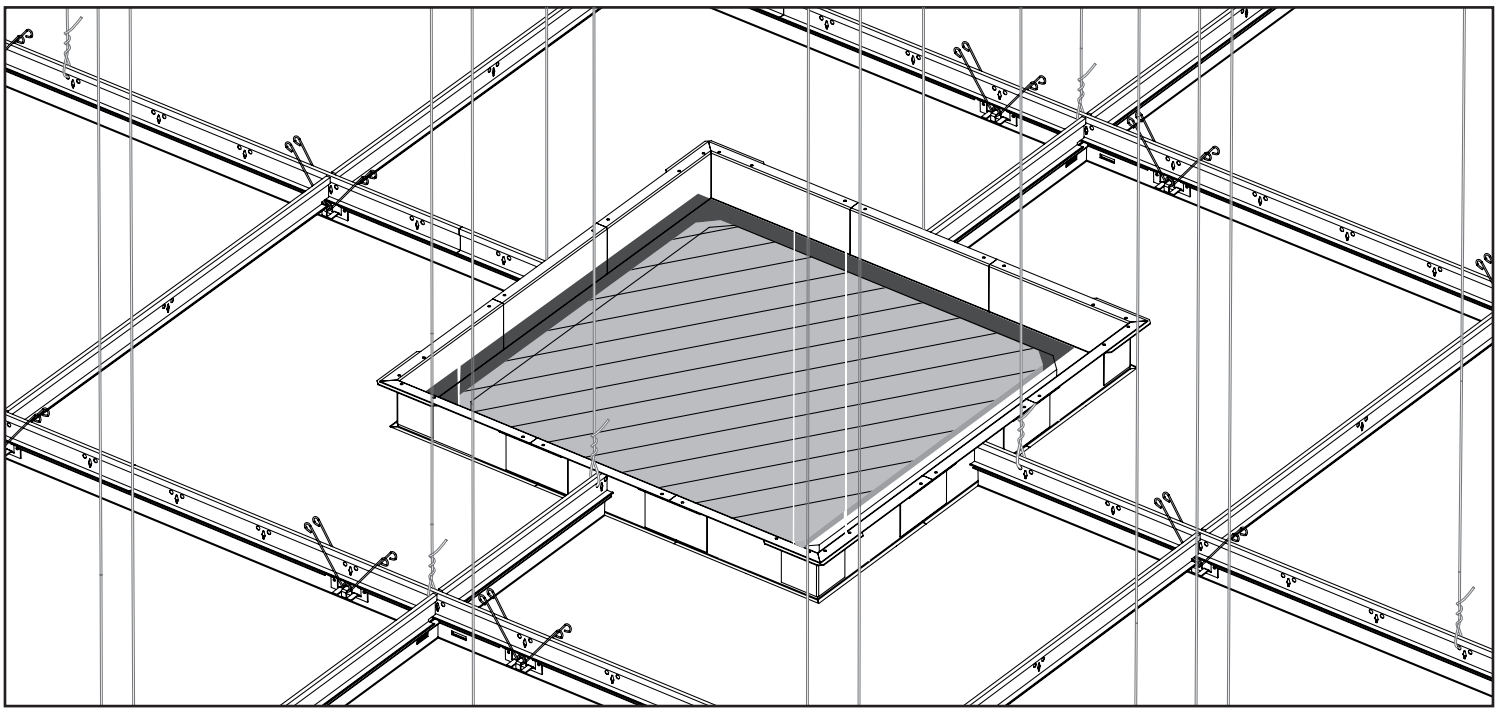




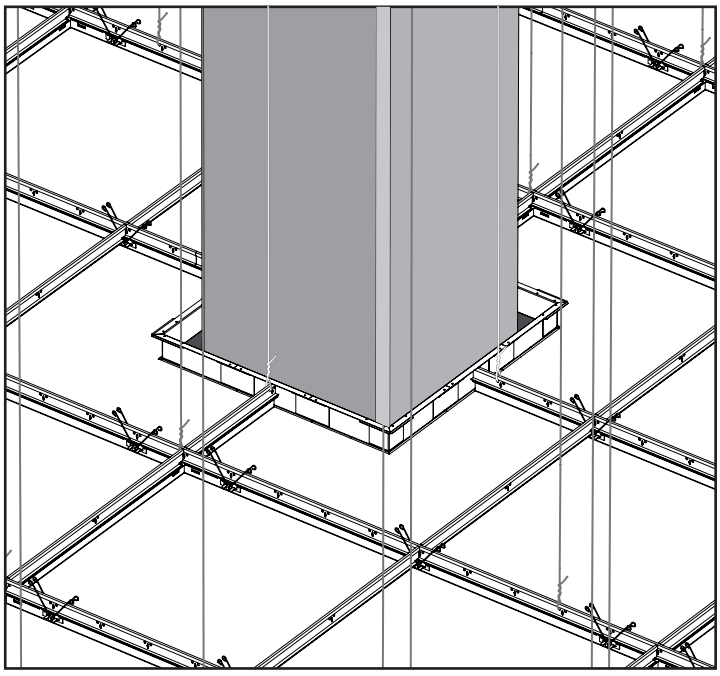


Perimeter Conditions

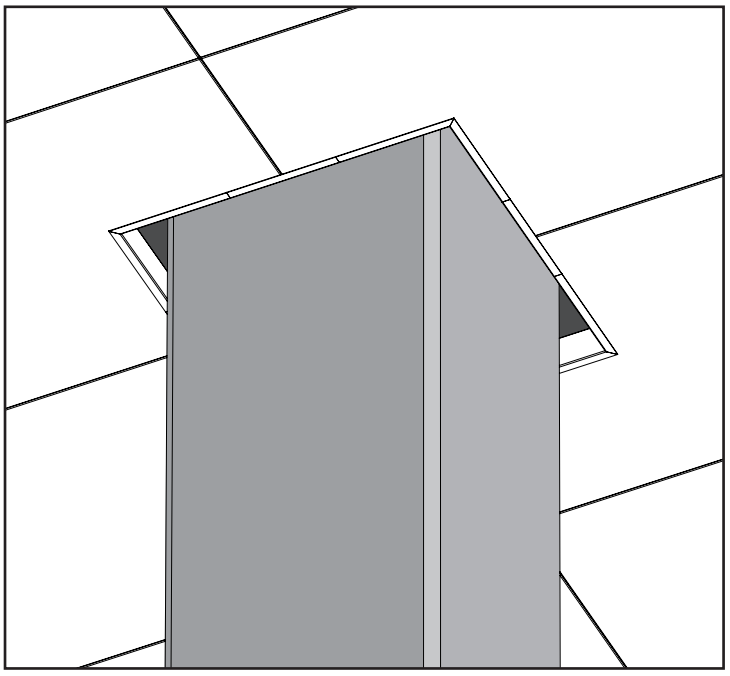
Column Integration Completed



COMPLETED TRIM INSTALLATION

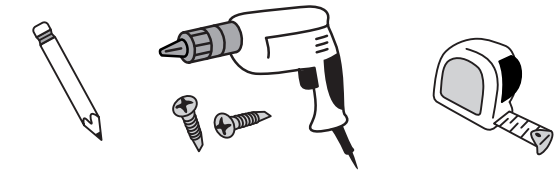


VIEW FROM PLENUM

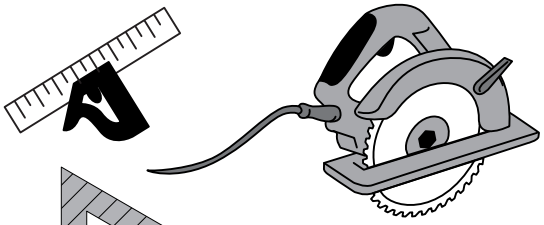


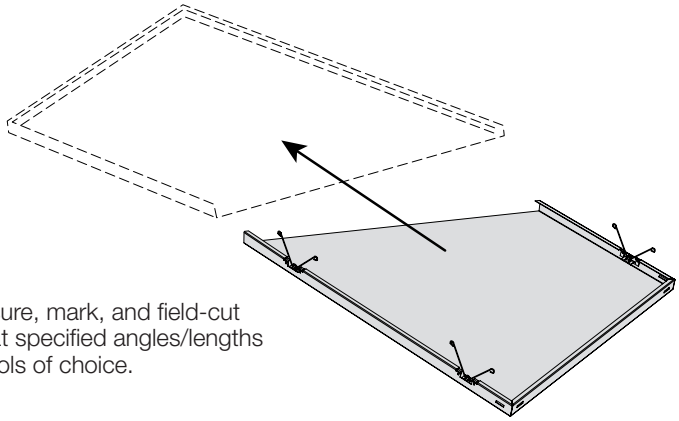
VIEW FROM FLOOR

Perimeter Conditions
Angled Wall Condition

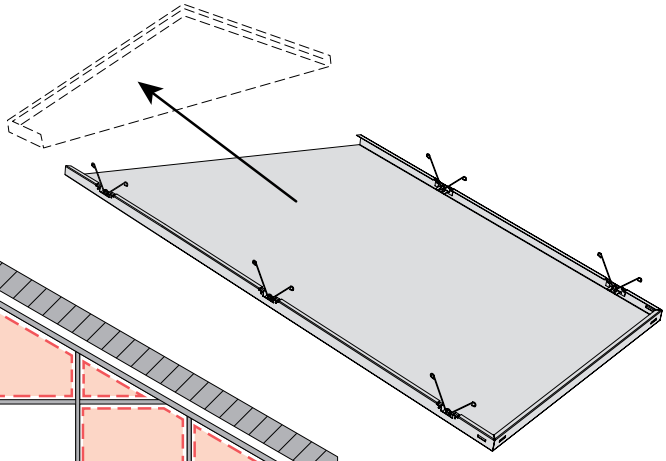


SUGGESTED TOOLS





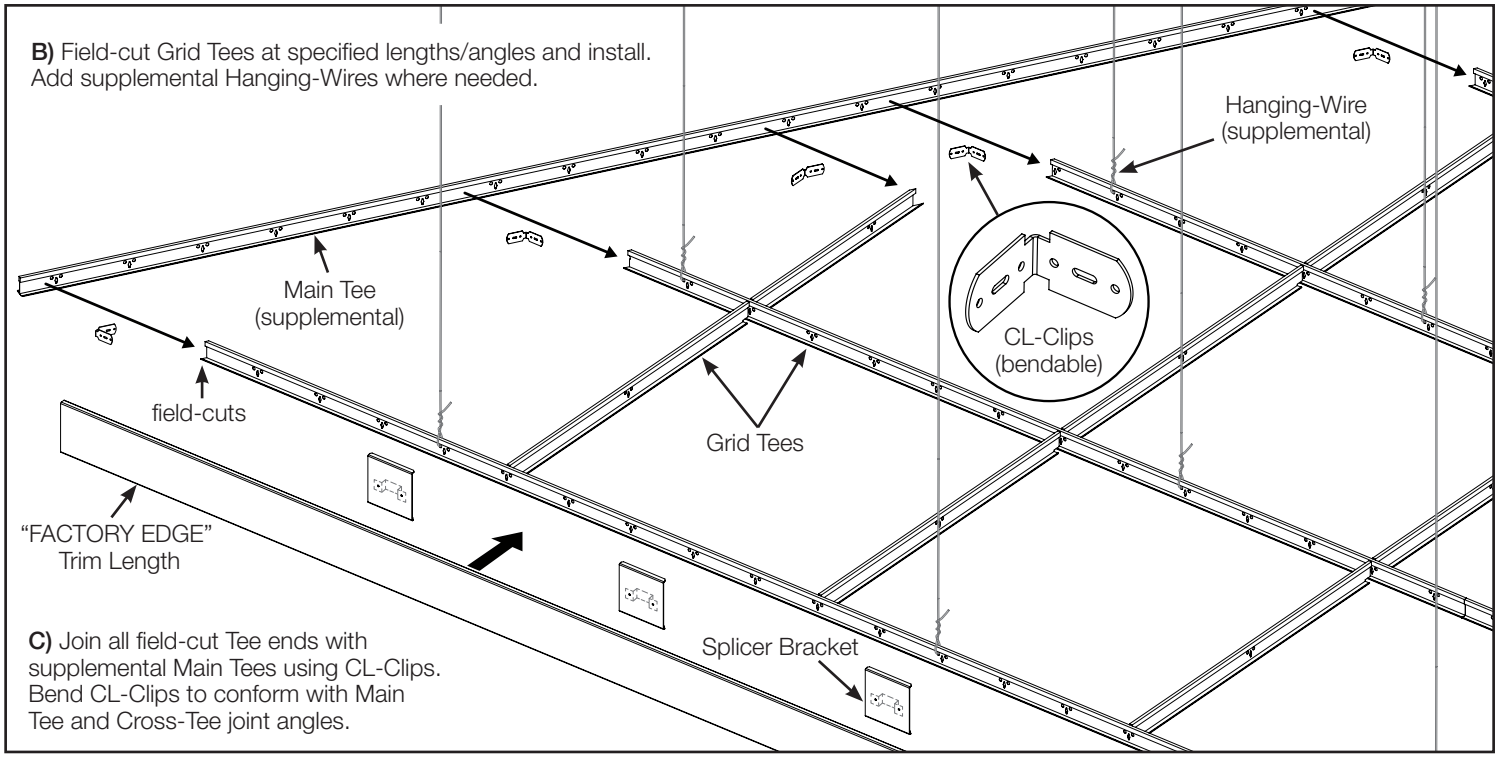
A) Measure, mark, and field-cut panels at specified angles/lengths using tools of choice.



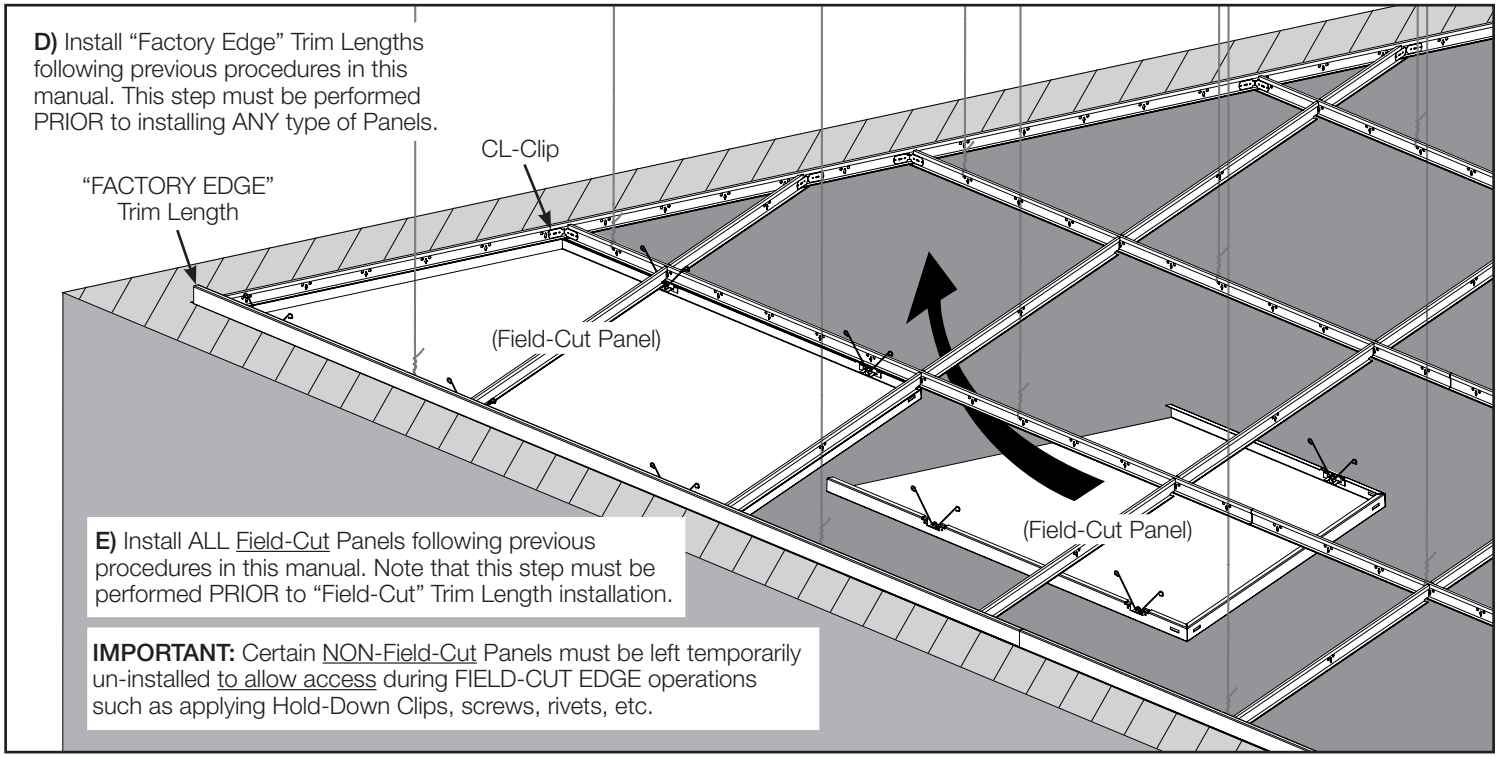
(30” X 60” panel examples)

RED SHADING INDICATES FIELD-CUT PANELS

Perimeter Conditions
Angled Wall Condition Cont'd.

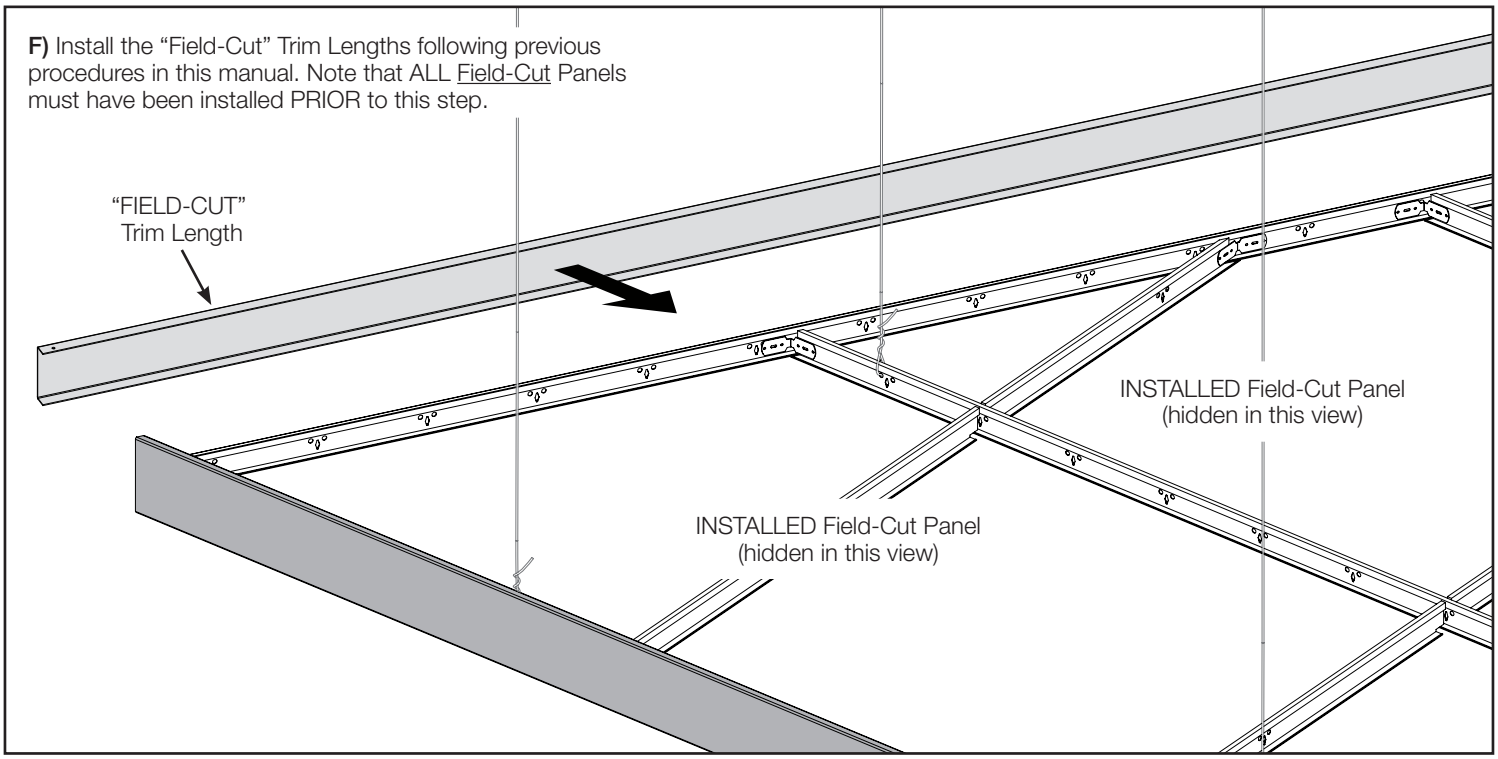


WALLS ARE HIDDEN IN THIS VIEW FOR CLARITY

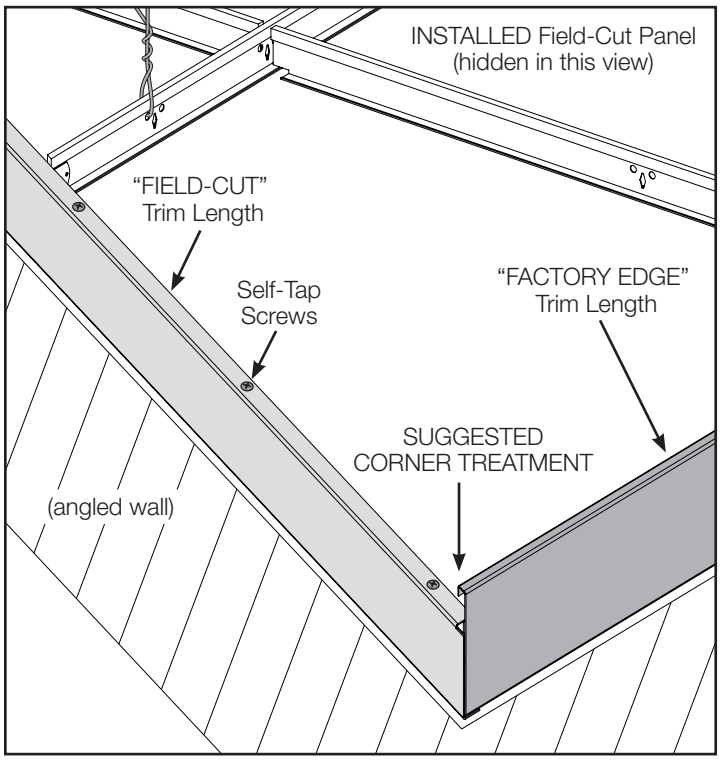


Perimeter Conditions
Angled Wall Condition Cont'd.

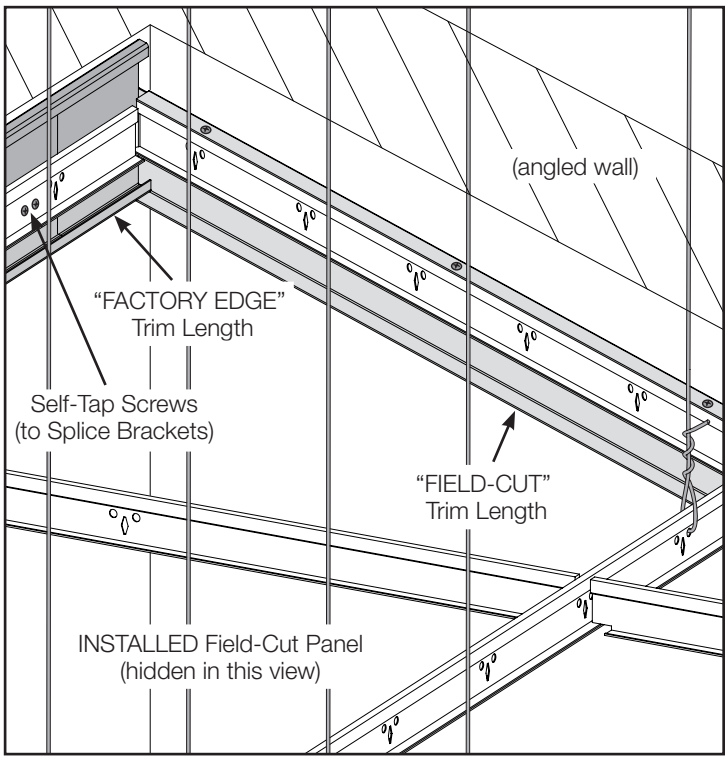
F) Install the "Field-Cut" Trim Lengths following previous procedures in this manual. Note that ALL Field-Cut Panels must have been installed PRIOR to this step.



WALLS HIDDEN IN THIS VIEW FOR CLARITY

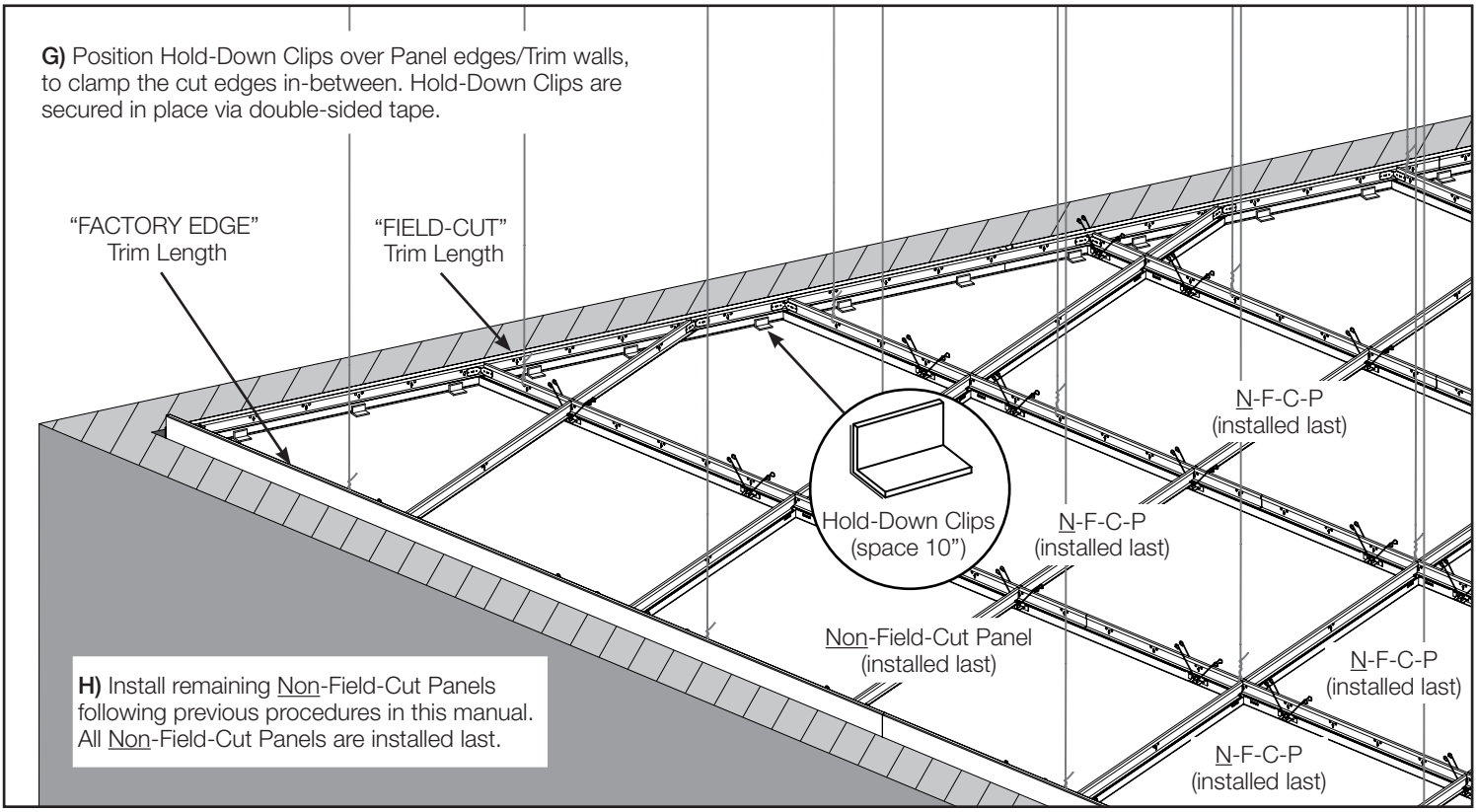


OUTSIDE CORNER VIEW FROM PLENUM

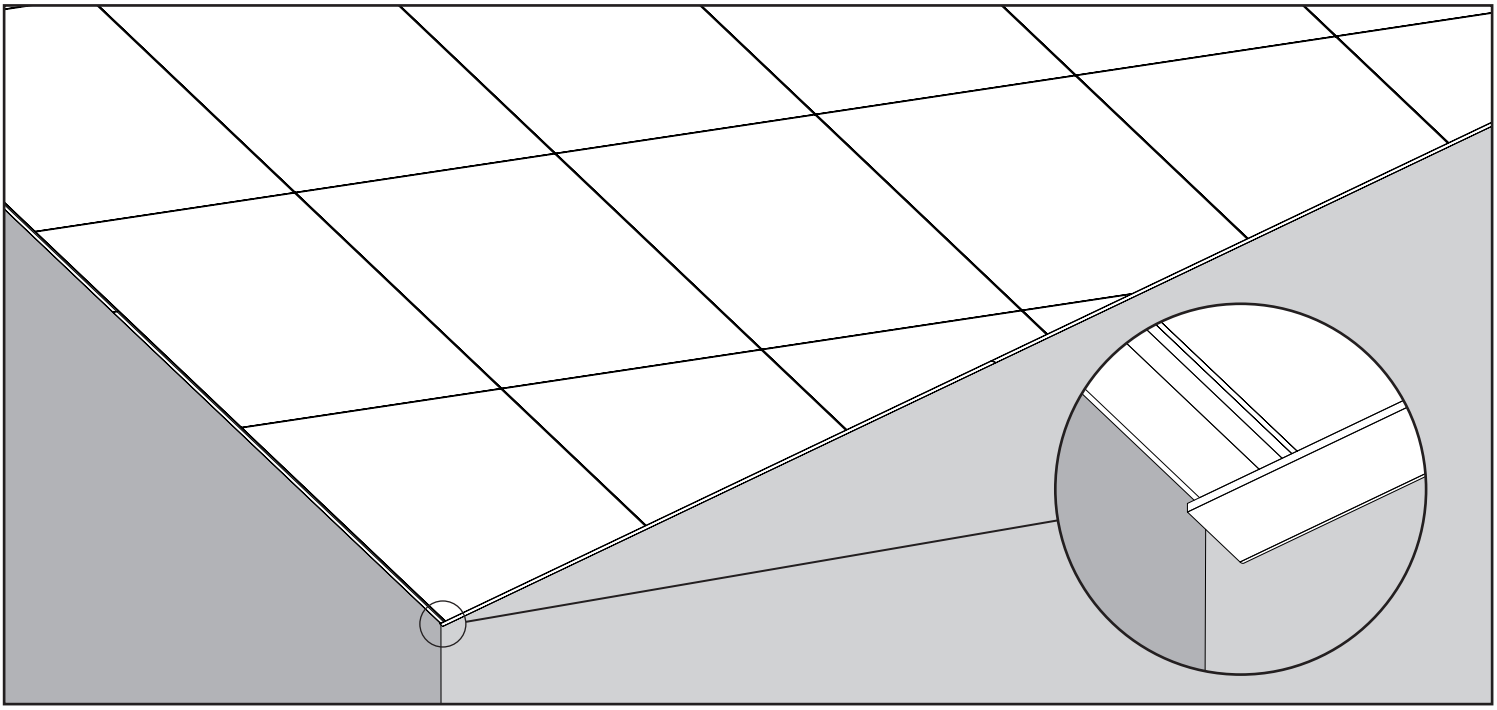


INSIDE CORNER VIEW FROM PLENUM

Perimeter Conditions
Angled Wall Condition Completed



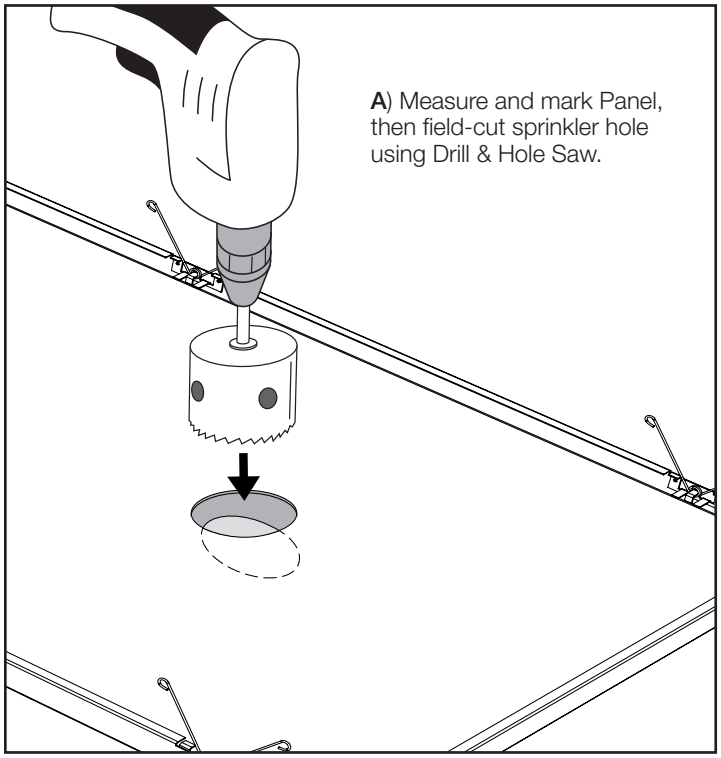
COMPLETED INSTALLATION (view from plenum)



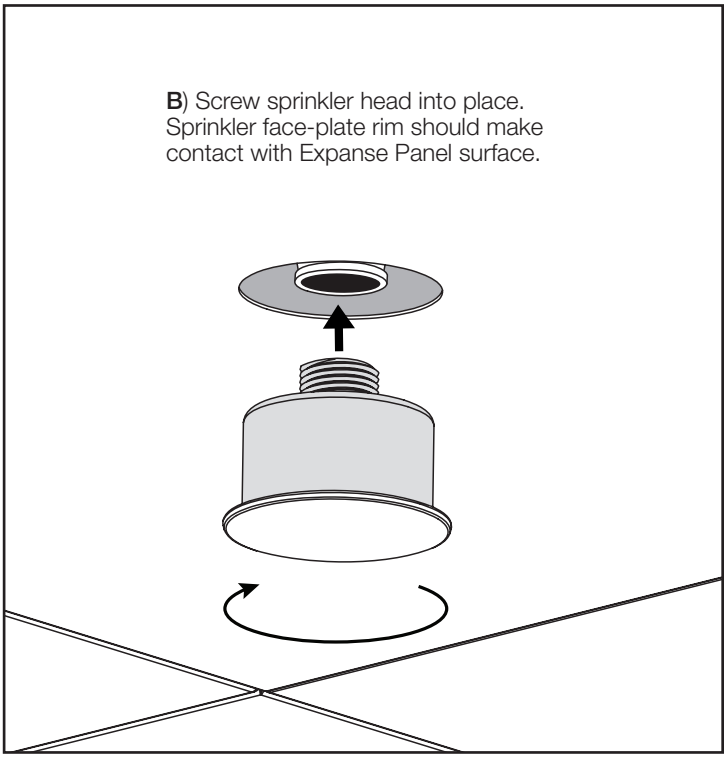
COMPLETED INSTALLATION (view from floor)

MEP Integration

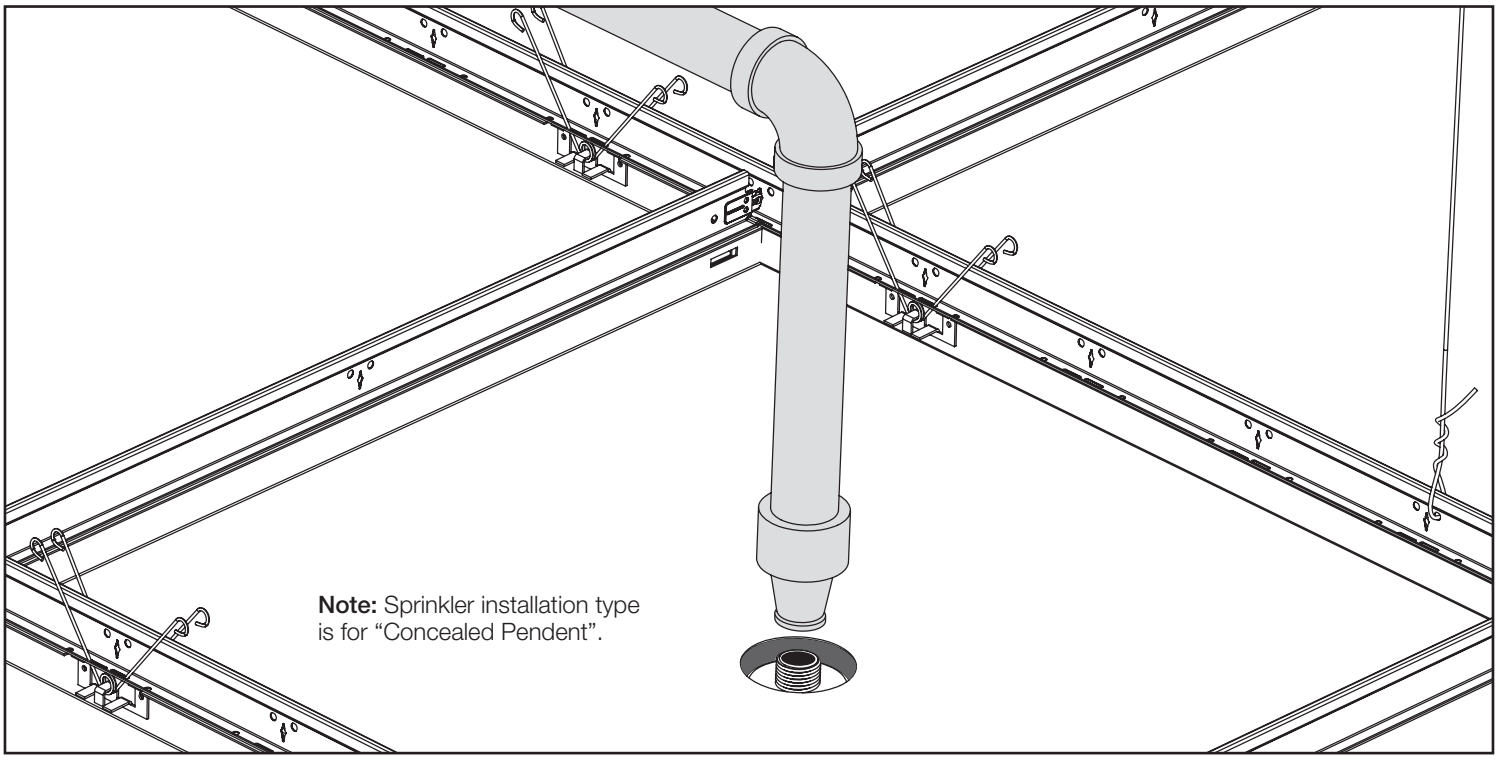
Fire Sprinklers Integration



A) Measure and mark Panel, then field-cut sprinkler hole using Drill & Hole Saw.



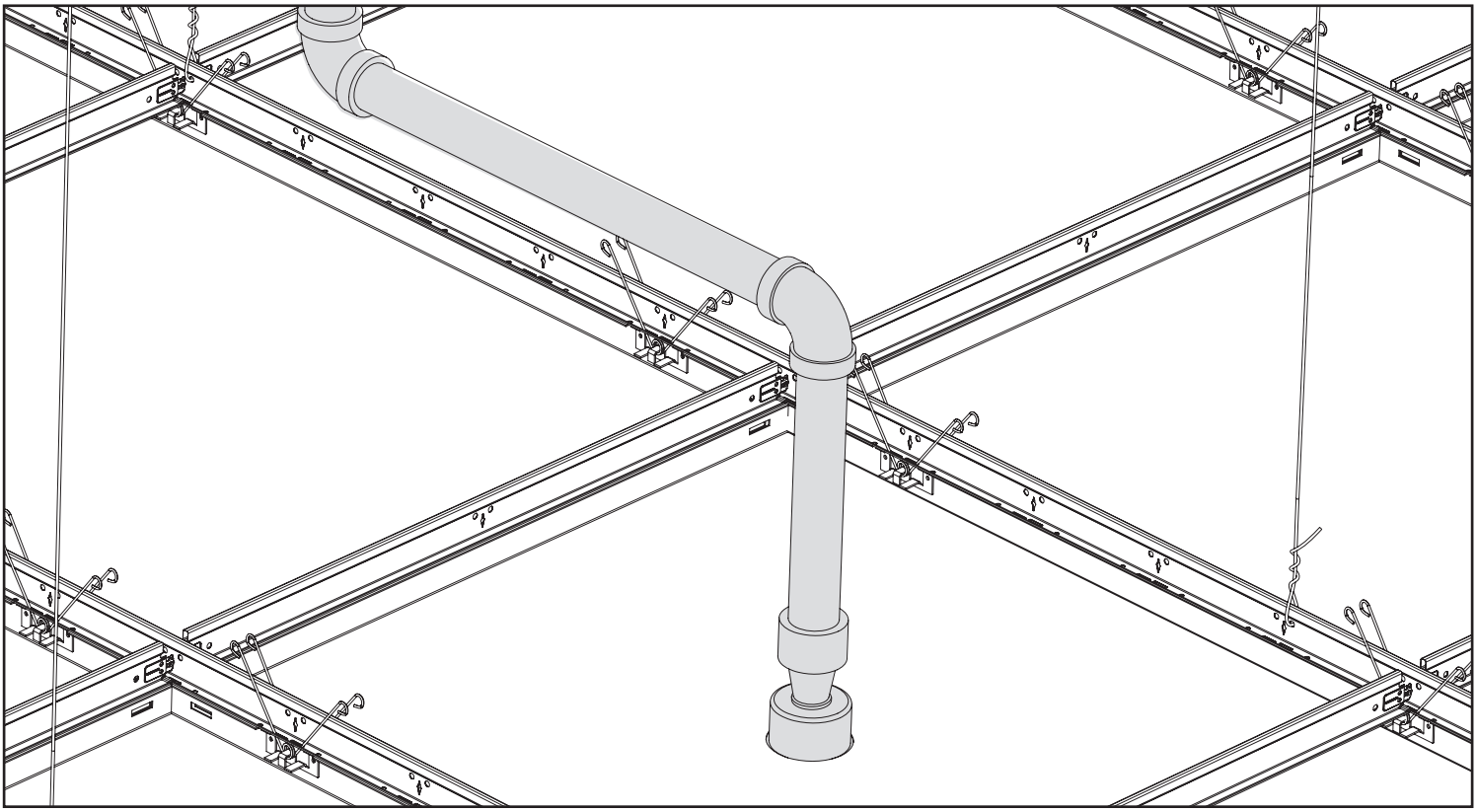
B) Screw sprinkler head into place. Sprinkler face-plate rim should make contact with Expanse Panel surface.



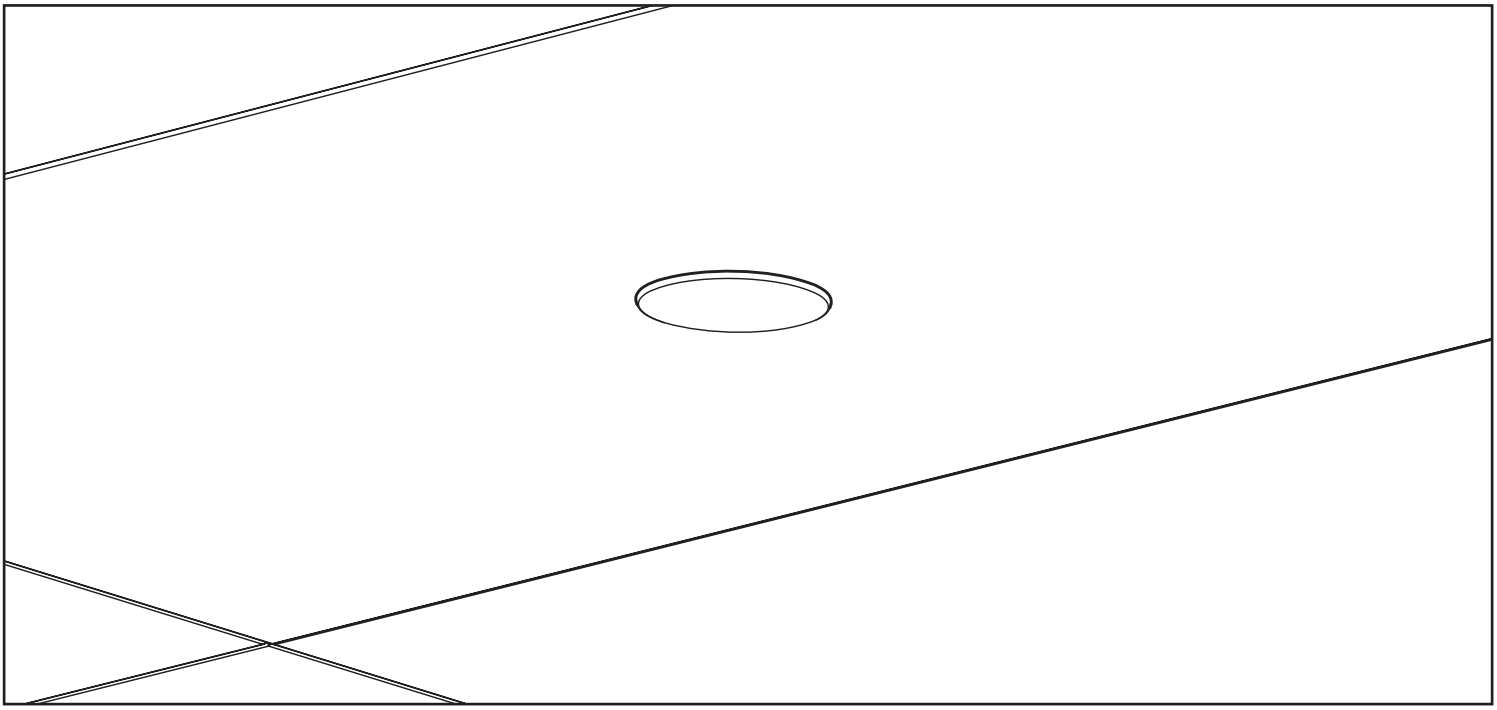
Note: Sprinkler installation type is for “Concealed Pendent”.

MEP Integration

Sprinkler Integration Completed



COMPLETED INSTALLATION (view from plenum)



COMPLETED INSTALLATION (view from floor)

Maintenance
Adjust & Clean

A. Adjust ceiling components to provide a consistent finish and appearance in conformity with established tolerances and requirements.

B. Clean exposed surfaces of acoustical metal panel ceilings and walls. Comply with manufacturer's written instructions for cleaning and touch-up of minor finish damage.

C. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage, including dented and bent units.

Support
Contacts

Contact your sales rep for any additional support.

SAFETY
Safety First! Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read MSDS and literature before specification and installation. Be cautious with exposed sharp edges when handling ceiling system components.

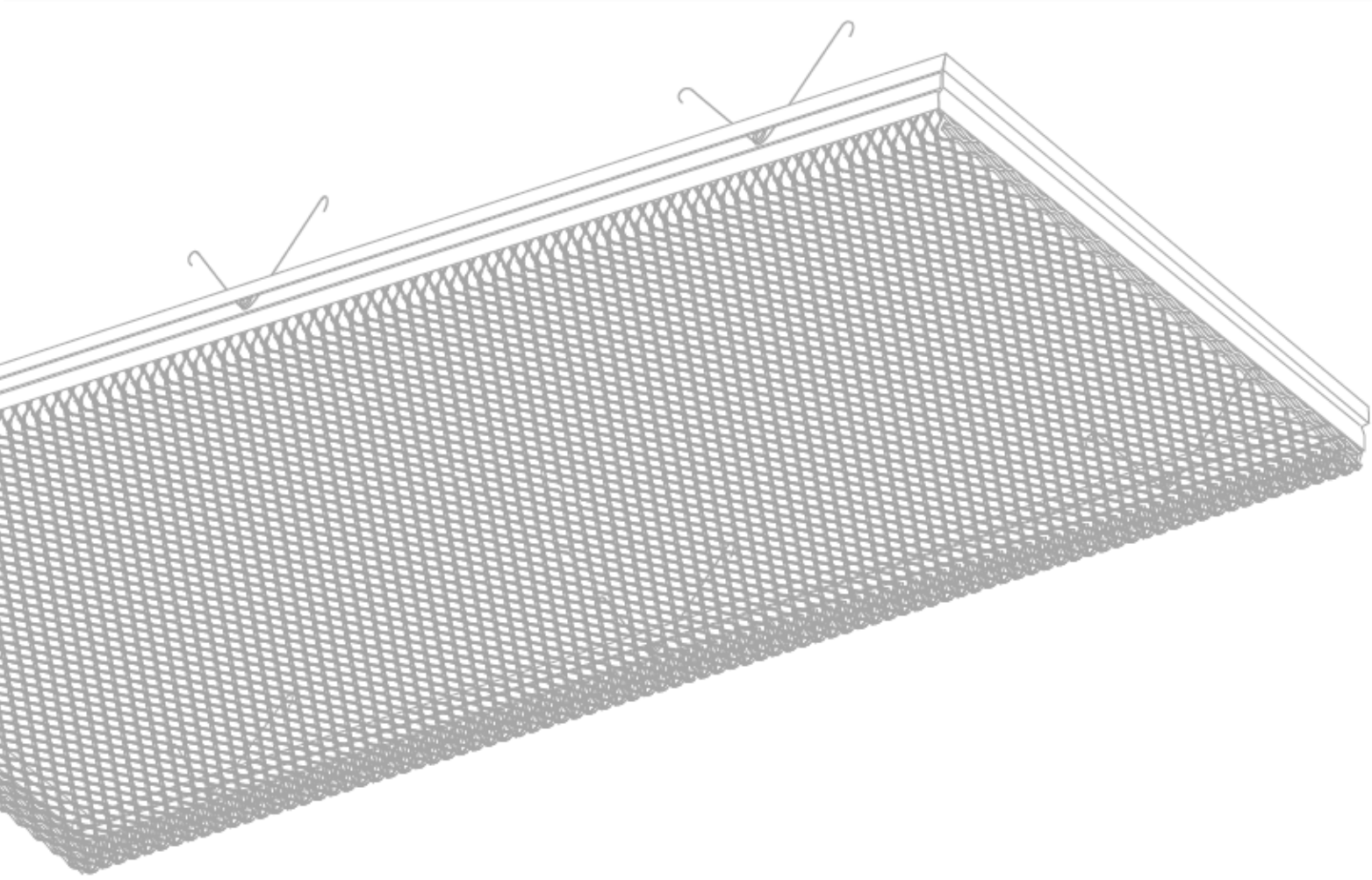
INSTALLATION
Prior to installation, make sure your project complies with any seismic & non-seismic requirements. Must be installed in compliance with ASTM C636, ASTM E580, utilizing standard industry practices and adopting applicable code requirements. Alternative assemblies and installation methods may be utilized when approved by the authority having jurisdiction. USG Ceiling Plus recommends checking with the authority having jurisdiction prior to designing and installing a suspended ceiling system.

LIMITATION
Some commercially acceptable color variation may occur between lots and between different size products of the same color.

LIABILITY
We shall not be liable for any incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions of for other than the intended use. Our liability is expressly limited to replacement of defective goods.
Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

Notes:

Notes



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