USG Ceiling Solutions

USG ALTA™ AND USG CIMA™ STRUCTURAL SUSPENSION SYSTEMS

INSTALLATION GUIDE

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USG Ceiling Solutions

USG ALTA™ AND USG CIMA™ STRUCTURAL SUSPENSION SYSTEMS

INSTALLATION GUIDE

INTRODUCTION

These instructions are provided as a guide to install USG ALTA™ and USG CIMA™ Structural Suspension Systems. The installer is responsible to ensure safe installation and adhere to the designed specification. USG ALTA™ and USG CIMA™ Structural Suspension Systems are comprised of extruded aluminum components designed to support heavy structures—such as cable trays, power bus systems and other data center services.

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USG ALTA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

SYSTEM OVERVIEW

Figure 1

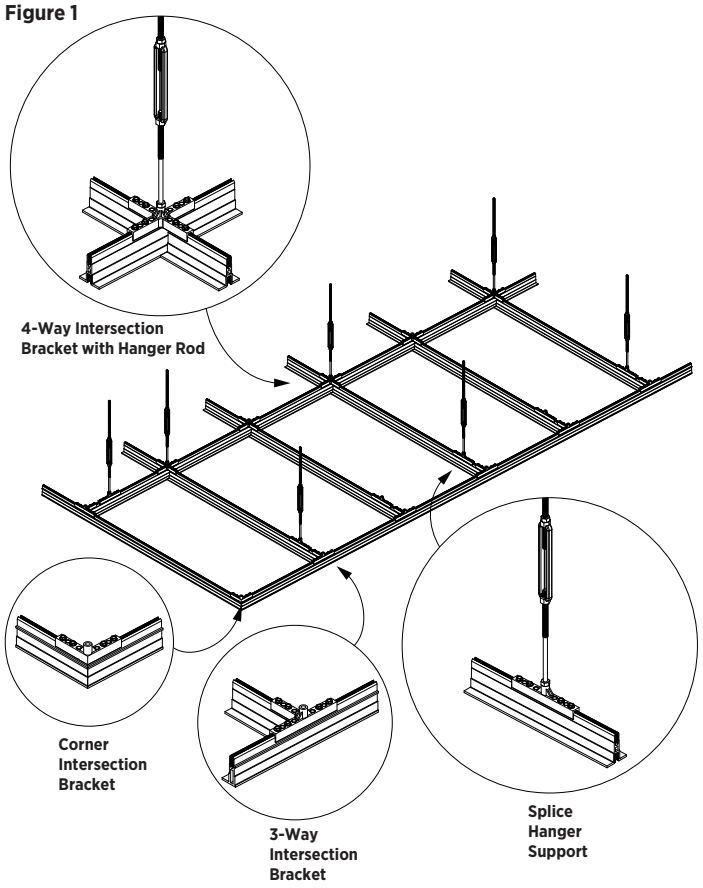
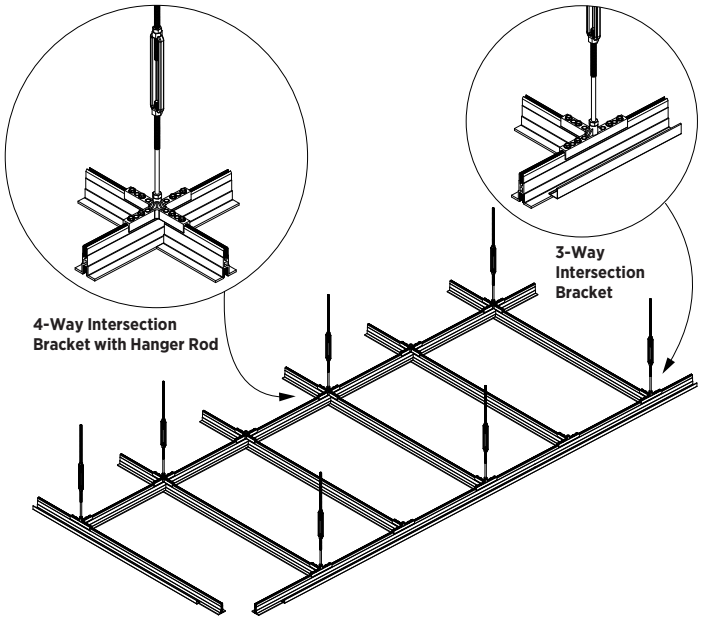


Figure 2



The USG ALTA™ Structural Suspension System is comprised of Main Tees (SGX40), Cross Tees (SGX240 or SGX440), Perimeter Tees (SGXWM40), Intersection Brackets, and a series of accessory components designed for specific project requirements.

The system is supported by 3/8"-16 threaded rod, which will be secured with a turnbuckle, for ceiling leveling, and intersection brackets to support the load required by the project.

Note: Threaded Rod and Nut above the Turnbuckle provided by other manufacturers. Confirm Rod diameter and threading specifications with USG during design phase.

This system integrates flawlessly with USG Data Center Acoustical Panels, designed to fit seamlessly in USG ALTA™ Structural Suspension System, and USG DataConstrux™ Ceiling-Mounted Containment System.

Figure 1 shows an overview of a typical fixed perimeter system—although each installation should follow the prescribed design and layout requirements. Figure 2 depicts a floating perimeter system.

USG ALTA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

SUSPENDED ASSEMBLY

Figure 3

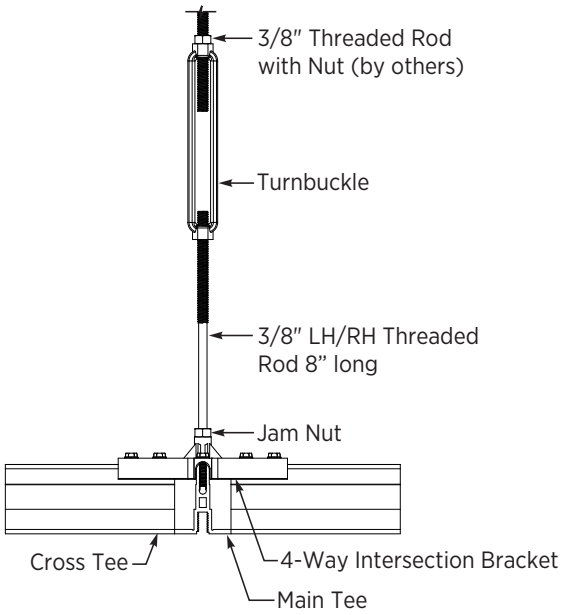
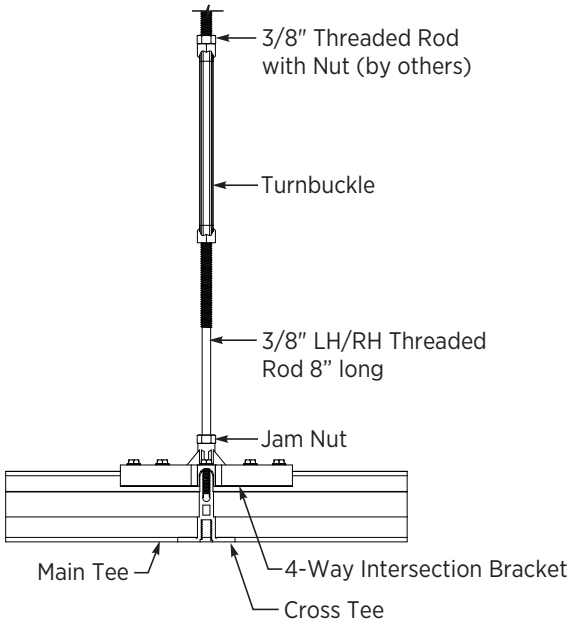


Figure 4



The USG ALTA™ Structural Suspension System comes with a threaded Turnbuckle (SGXACLW) that will connect the ceiling system to the pre-attached threaded rod.

Note: It is important to ensure the pre-attached threaded rod is spaced per load requirement and leveled off appropriately.

First thread a nut (provided by others) and the top side of the turnbuckle to the pre-attached threaded rod. Once the threaded rod has at least three (3) threads inside the turnbuckle, tighten the nut at the top until secure.

Next, thread the supplied 8" 3/8 threaded rod to the bottom half of the turnbuckle. Screw on a nut within the turnbuckle, but do not tighten yet.

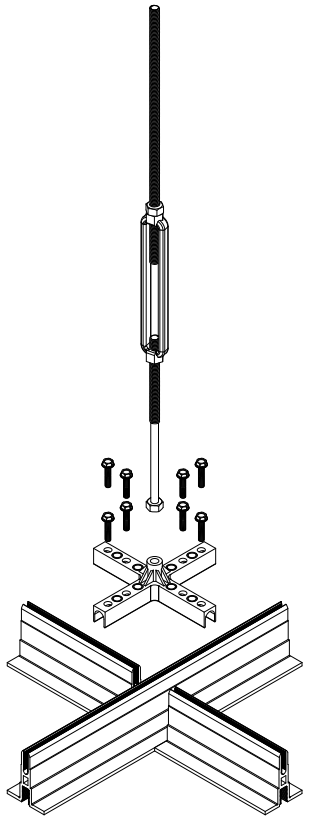
Use the bottom threaded rod as the mechanism to lift or lower the system until fully aligned. Once fully aligned, tighten the nut on the bottom.

USG ALTA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

CONNECTIONS

4-WAY INTERSECTION BRACKET

Figure 5



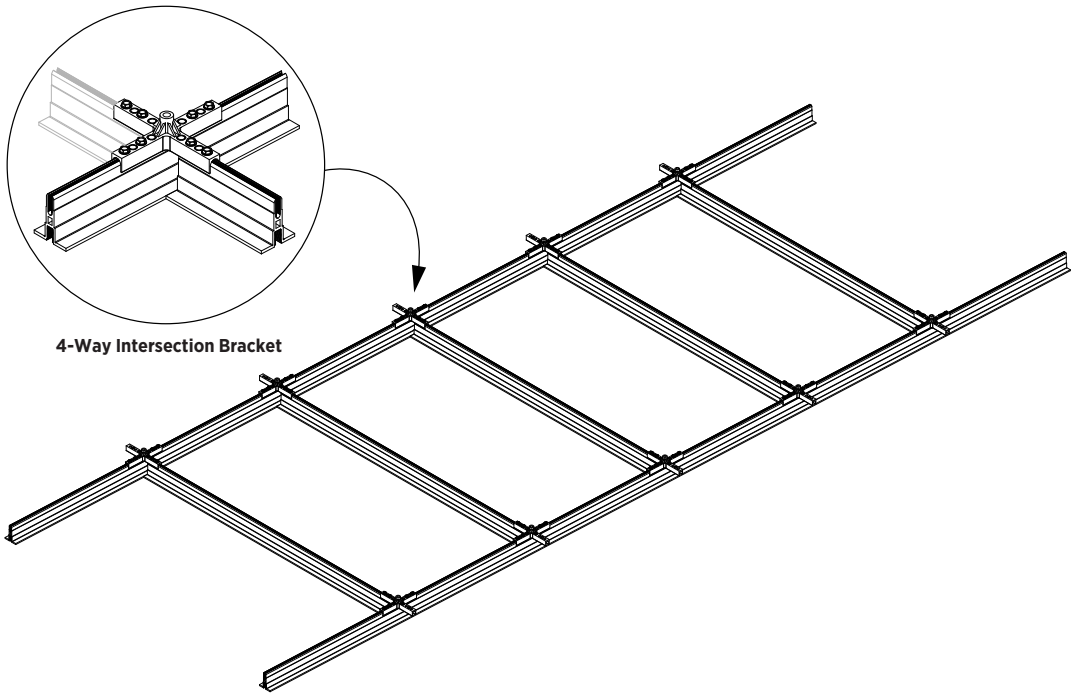
The SGXIB4W is a 4-way connection component that is used to connect Main Tees (SGX40) to Cross Tee (SGX440) components. This component will also be used to fasten the threaded rod into the intersection.

To secure the intersection, place two (2) 1" fasteners on each leg—for a total of eight (8) fasteners to secure the 4-Way Intersection Bracket as seen in Figure 5.

Helpful Hint: It is recommended to pre-assemble ceiling modules in a jig prior to connecting any components onto the threaded rod. Installers can create a 12x4′ "ladder" or module with two (2) main tees, and five (5) cross tees. Use 5″ clamps to stack next to the original section as a proxy.

Note: It is very important to ensure the first module created is measured accurately for repeatable success as noted in Figure 6.

Figure 6

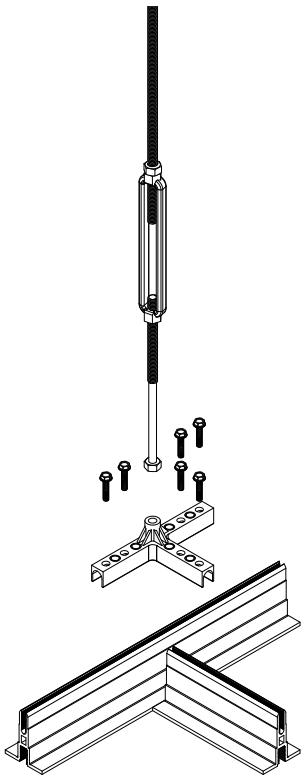


USG ALTA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

CONNECTIONS

3-WAY INTERSECTION BRACKET

Figure 7

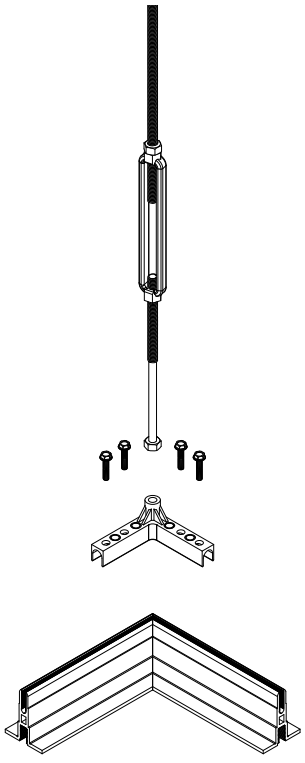


The SGXIB3W is a 3-way connection component that is used to connect Main or Cross Tees and Perimeter Tees (SGXWM40) in a 3-way intersection. This part will typically be used at the perimeter when connecting the Perimeter Tee (SGXWM40) or Main Tee (SGX40) at the perimeter to an intersecting tee.

To secure the intersection, place two (2) 1" fasteners on each leg—for a total of six (6) fasteners to secure the 3-Way Intersection Bracket as seen in Figure 7.

CORNER INTERSECTION BRACKET

Figure 8



The SGXIC is a corner connection component that is used to create a corner with two Perimeter Tees (SGXWM40). Note: For best results, it is recommended to miter each intersecting perimeter tee.

To secure the intersection, place two (2) 1" fasteners on each leg—for a total of four (4) fasteners to secure the Corner Intersection Bracket as seen in Figure 8.

USG ALTA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

PERIMETER CONDITIONS

FIXED PERIMETER

Figure 9

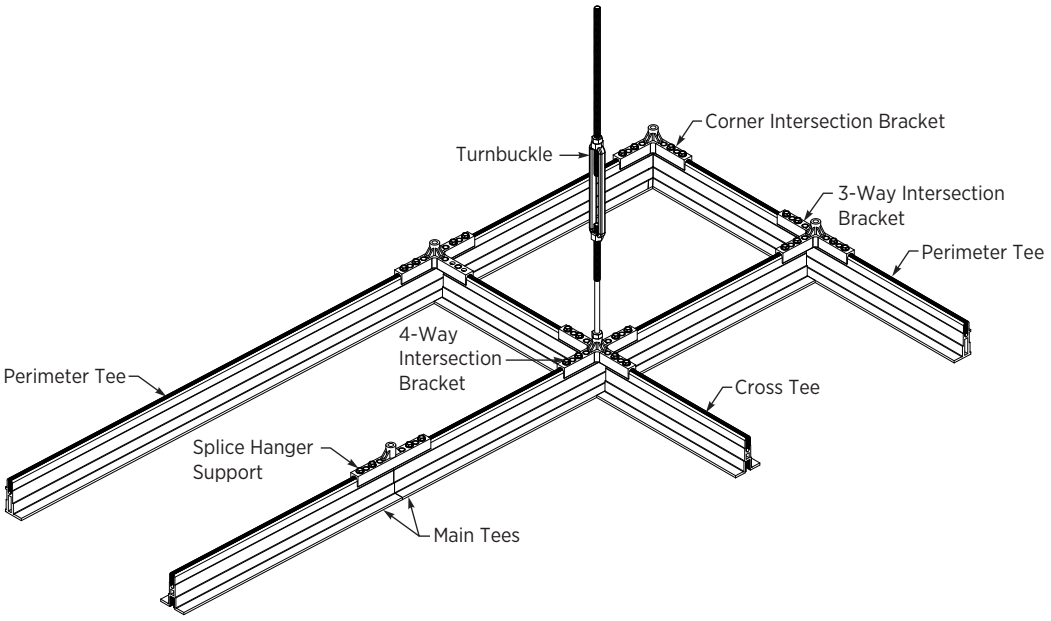
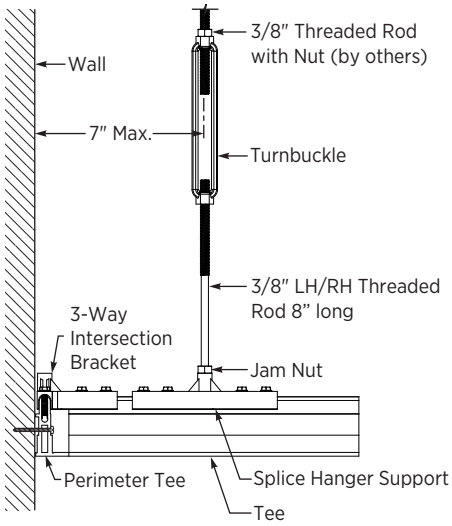


Figure 10



A fixed perimeter requires the use of the SGXWM40 Perimeter Tee. Where the SGXWM40 is fastened to the perimeter wall and a perpendicular Main Tee (SGX40) or Cross Tee (SGX440).

The SGXWM40 and SGX40 or SGX440 will use the 3-Way Intersection Bracket to connect at the intersection point as seen in Figure 10.

Typically, a 3/8" threaded rod and turnbuckle are needed at each intersection, spaced a maximum of 7" from the perimeter wall.

USG ALTA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

PERIMETER CONDITIONS
FLOATING PERIMETER

Figure 11

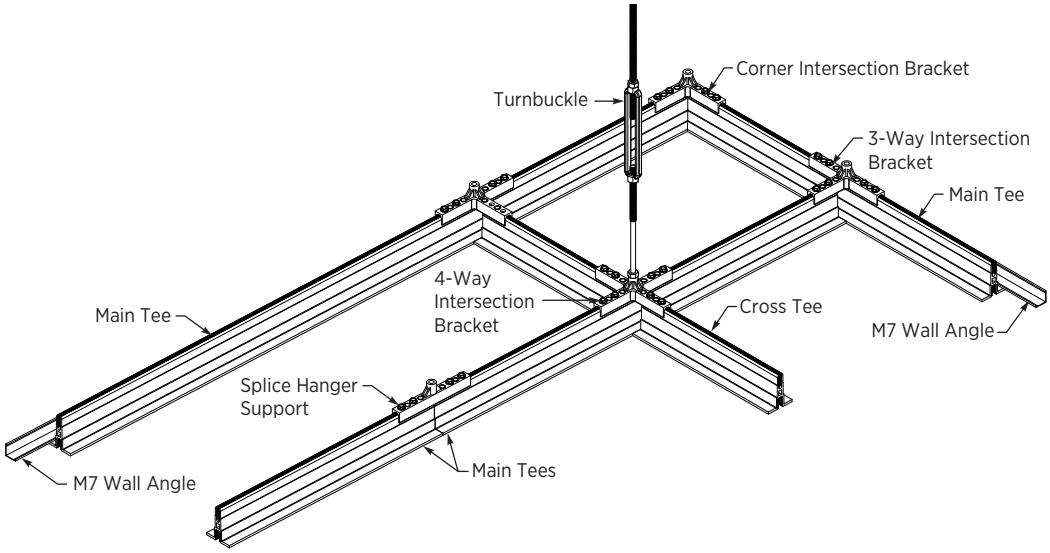


Figure 12

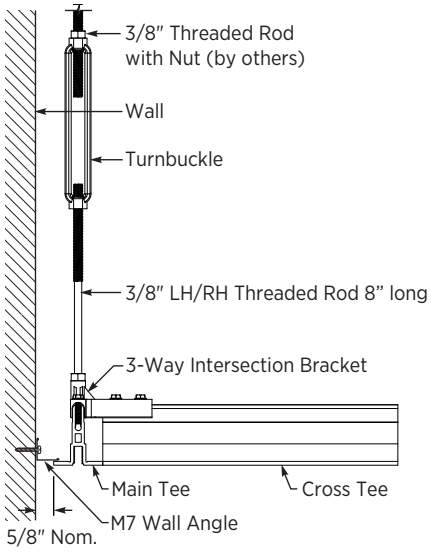
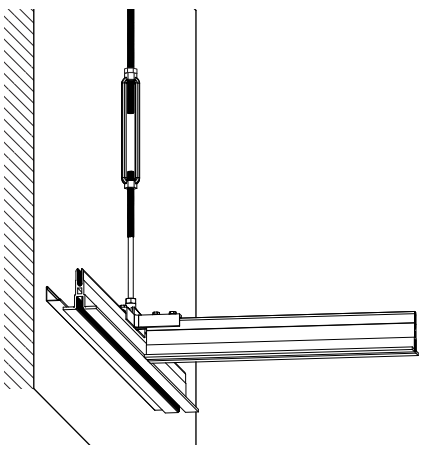


Figure 13



A foating perimeter utilizes a Main Tee (SGX40) or Cross Tees (SGX440) that run parallel to the perimeter wall, providing a gap between the perimeter wall and the floating parallel tee.

The 3-Way Intersection Bracket will be used to connect the floating tee with an intersecting Main Tee (SGX40) or Cross Tee (SGX440) as shown in Figure 12. A 3/8" threaded rod and turnbuckle will be placed at each intersection.

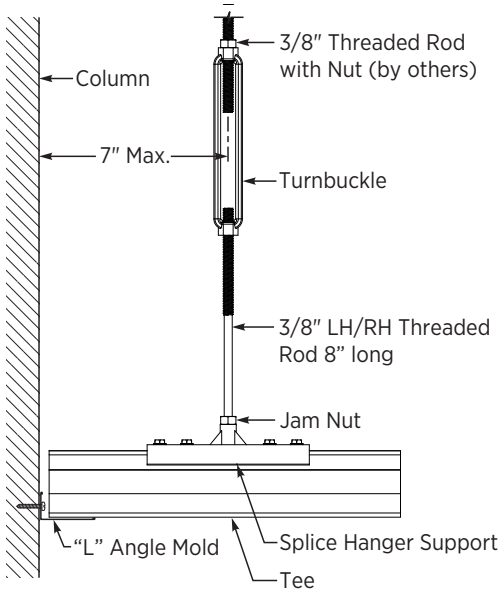
To close off the gap between the perimeter wall, install USG Acoustical Wall Molding M7 (7/8") as seen in Figure 13.

Helpful Hint: M7 wall molding should be aligned and installed before the structural suspension system.

USG ALTA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

COLUMN CONDITIONS

Figure 14



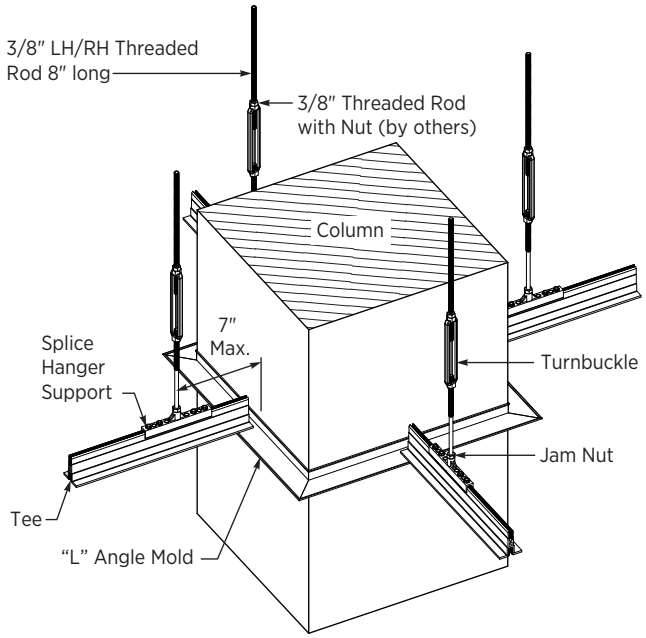
If columns are present within the ceiling plenum, it will be necessary to install the structural grid around the column for a continuous ceiling plane.

Fix ″L″ angle mold around the perimeter of the column, mitering the corners as shown in Figures 14 and 15.

Main Tees (SGX40) or Cross Tees (SGX440) will need to be cut for length to sit on the bottom leg of the 2″ wall molding.

Install the Splice Hanger Support where the threaded rod is—up to 7″ from the column perimeter. Fasten the 3/8″ threaded rod and turnbuckle to the above structure.

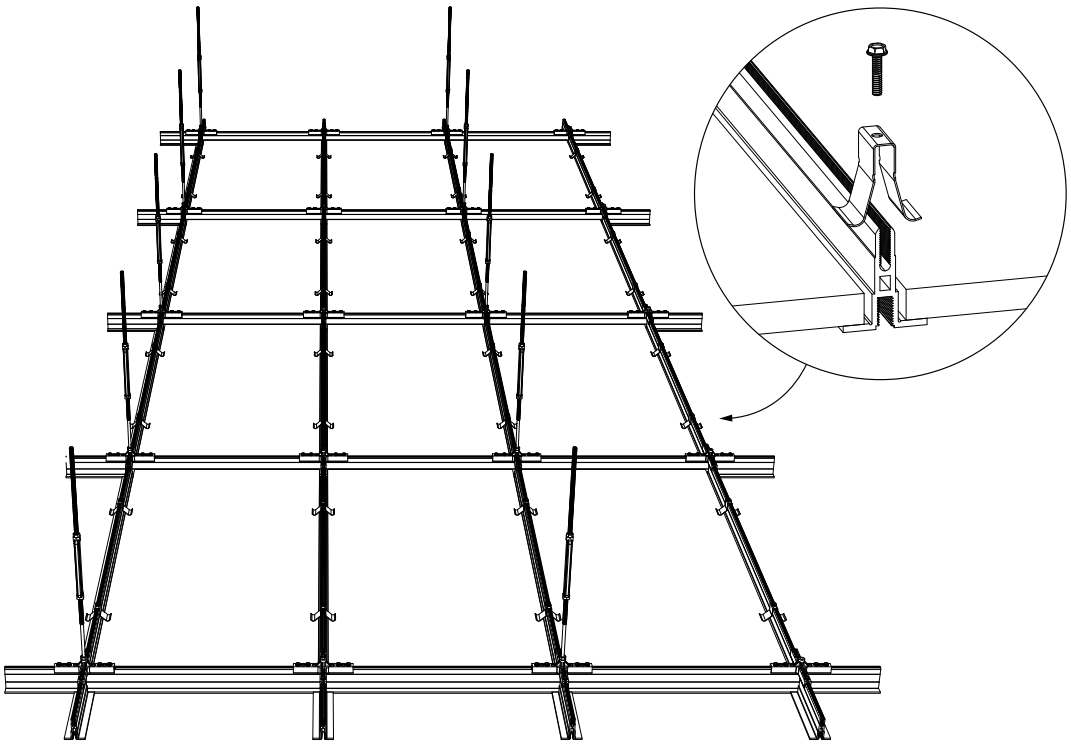
Figure 15



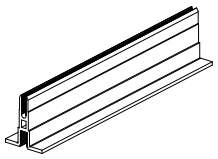
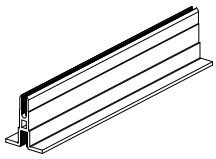
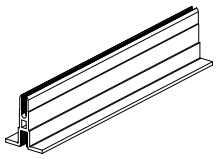
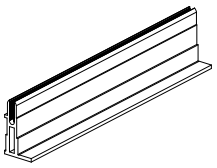
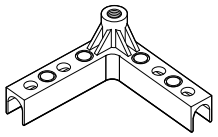
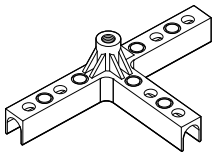
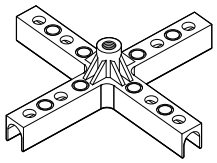
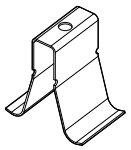
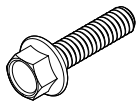
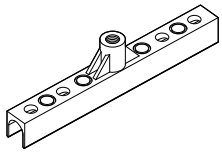
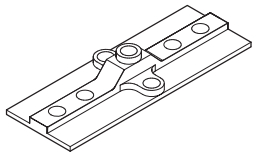
USG ALTA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

HOLD DOWN CLIP APPLICATION

When application calls for hold down clips, place four (4) double-sided Hold Down Clips (SGXACHC1) per module. Each 2x4 panel is held down by hold down clips placed on the 4ft side, 12″ from the end. Each Hold Down Clip is secured with a 1/4″-20 x 1″ long bolt that is secured into the top of each tee.



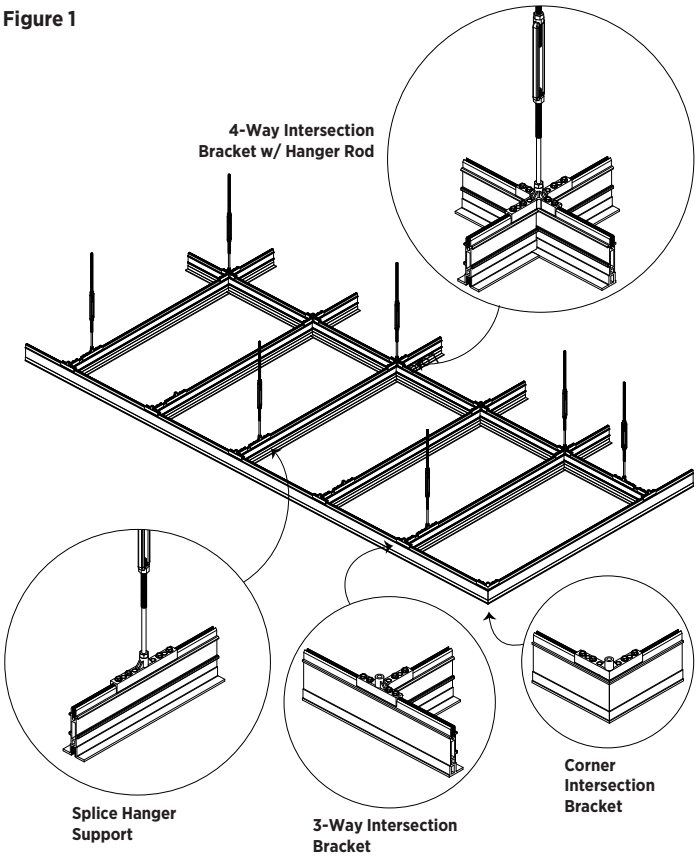
USG ALTA™ STRUCTURAL SUSPENSION SYSTEM COMPONENTS

SGX40 12' Main Tee	**SGX440** 4' Cross Tee	**SGX240** 2' Cross Tee	**SGXWM40** 12' Perimeter Tee
			
SGXIBC Corner Intersection Bracket	**SGXIB3W** 3-Way Intersection Bracket	**SGXIB4W** 4-Way Intersection Bracket	**SGXACHC1** Hold Down Clip
			
SGXACLW Turnbuckle	**SGXACB** 1/4" Bolt	**SGXSHS** Splice Hanger Support	**SGXDCCA** Clip Assembly
			

USG CIMA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

SYSTEM OVERVIEW

Figure 1



The USG CIMA™ Structural Suspension System is comprised of Main Tees (SGX64), Cross Tees (SGX264 or SGX464), Perimeter Tees (SGXWM64), Intersection Brackets, and a series of accessory components designed for specific project requirements.

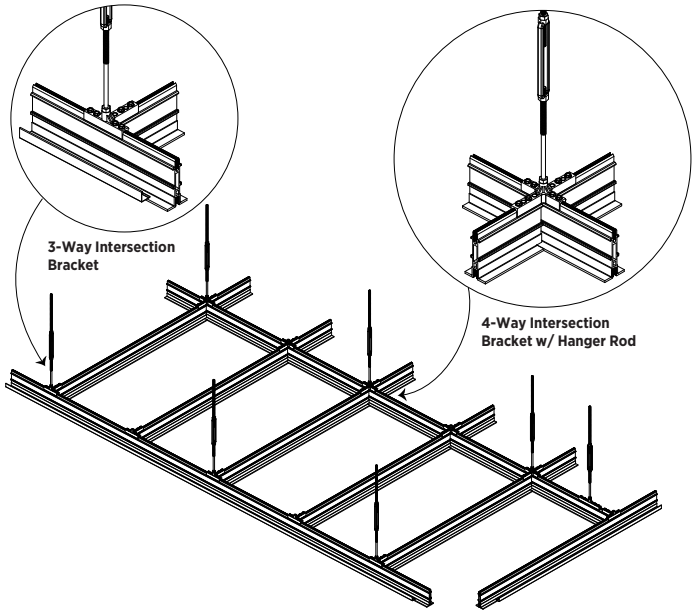
The system is supported by 3/8"-16 threaded rod, which will be secured with a turnbuckle, for ceiling leveling, and intersection brackets to support the load required by the project.

Note: Threaded Rod and Nut above the Turnbuckle provided by other manufacturers. Confirm Rod diameter and threading specifications with USG during design phase.

This system integrates flawlessly with USG Data Center Acoustical Panels, designed to fit seamlessly in USG CIMA™ Structural Suspension System, and USG DataConstrux™ Ceiling-Mounted Containment System.

Figure 1 shows an overview of a typical fixed perimeter system—although each installation should follow the prescribed design and layout requirements. Figure 2 depicts a floating perimeter system.

Figure 2



USG CIMA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

SUSPENDED ASSEMBLY

Figure 3

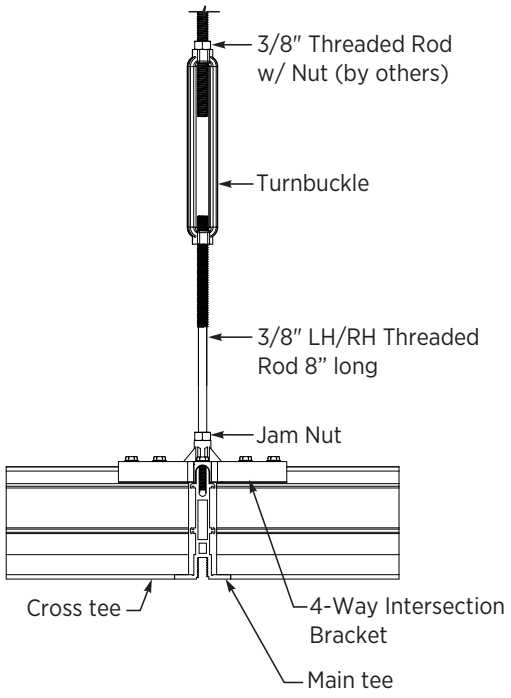
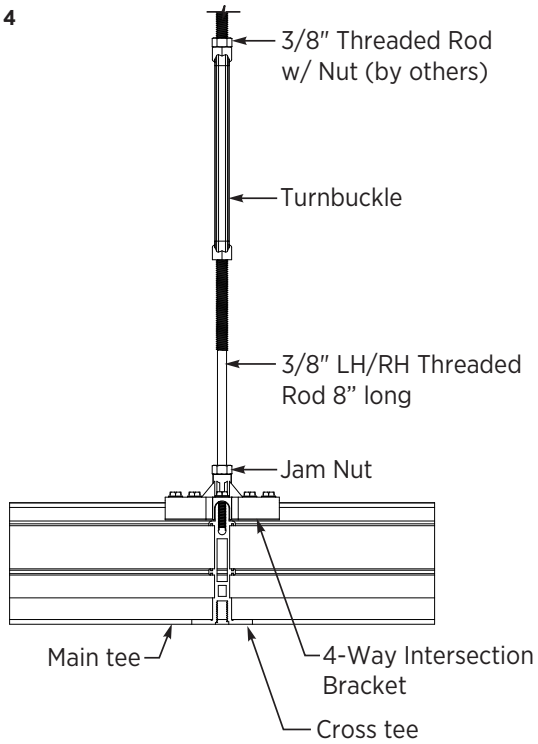


Figure 4



The USG CIMA™ Structural Suspension System comes with a threaded Turnbuckle (SGXACLW) that will connect the ceiling system to the pre-attached threaded rod.

Note: It is important to ensure the pre-attached threaded rod is spaced per load requirement and leveled off appropriately.

First thread a nut (provided by others) and the top side of the turnbuckle to the pre-attached threaded rod. Once the threaded rod has at least three (3) threads inside the turnbuckle, tighten the nut at the top until secure.

Next, thread the supplied 8" 3/8 threaded rod to the bottom half of the turnbuckle. Screw on a nut within the turnbuckle, but do not tighten yet.

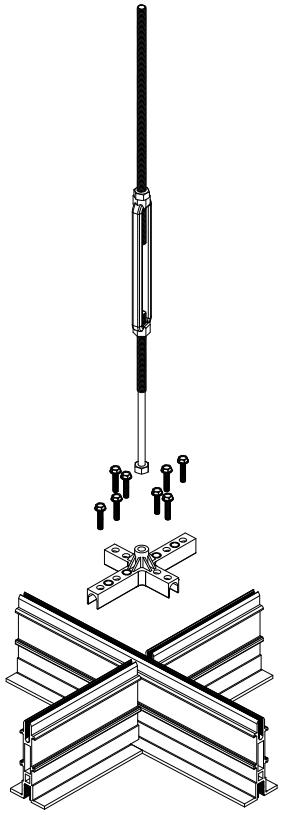
Use the bottom threaded rod as the mechanism to lift or lower the system until fully aligned. Once fully aligned, tighten the nut on the bottom.

USG CIMA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

CONNECTIONS

4-WAY INTERSECTION BRACKET

Figure 5



The SGXIB4WHD is a 4-way connection component that is used to connect Main Tees (SGX64) to Cross Tee (SGX464) components. This component will also be used to fasten the threaded rod into the intersection.

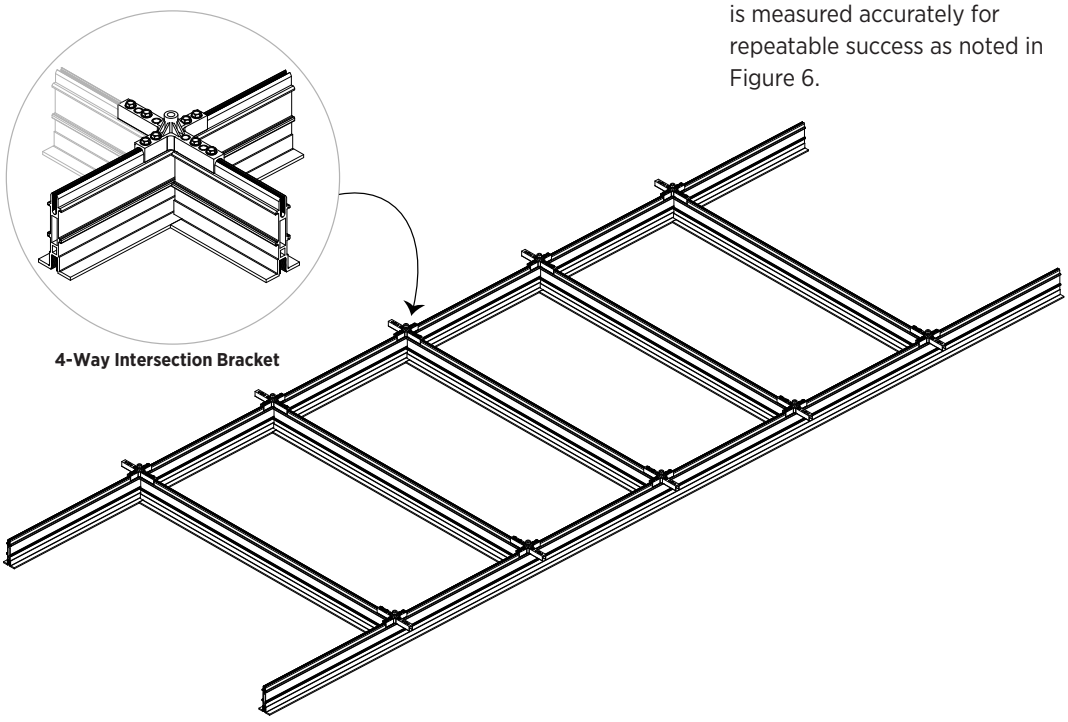
The CIMA™ 4-Way Intersection Bracket can only be mounted in one direction due to the center of the web. This feature ensures the connector will always align with the main tee.

To secure the intersection, place two (2) 1" fasteners on each leg—for a total of eight (8) fasteners to secure the 4-Way Intersection Bracket as seen in Figure 5.

Helpful Hint: It is recommended to pre-assemble ceiling modules in a jig prior to connecting any components onto the threaded rod. Installers can create a 12x4′ "ladder" or module with two (2) main tees, and five (5) cross tees. Use 5″ clamps to stack next to the original section as a proxy.

Note: It is very important to ensure the first module created is measured accurately for repeatable success as noted in Figure 6.

Figure 6

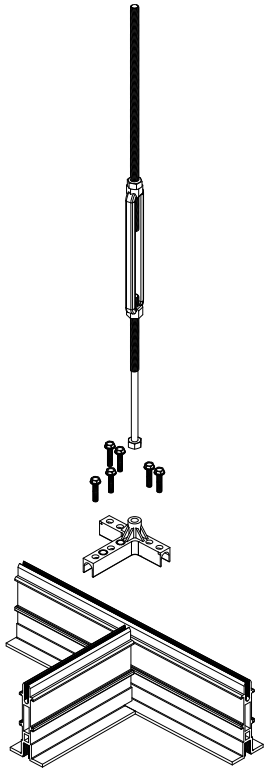


USG CIMA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

CONNECTIONS

3-WAY INTERSECTION BRACKET

Figure 7



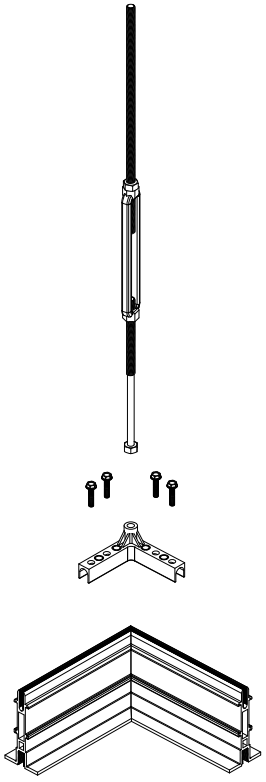
The SGXIB3WHD is a 3-way connection component that is used to connect Main or Cross Tees and Perimeter Tees (SGXWM64) in a 3-way intersection. This part will typically be used at the perimeter when connecting the Perimeter Tee (SGXWM64) or Main Tee (SGX64) at the perimeter to an intersecting tee.

The CIMA™ 3-Way Intersection Bracket can only be mounted in one direction due to the center of the web. This feature ensures the connector will always align with the main tee.

To secure the intersection, place two (2) 1" fasteners on each leg—for a total of six (6) fasteners to secure the 3-Way Intersection Bracket as seen in Figure 7.

CORNER INTERSECTION BRACKET

Figure 8



The SGXIBC is a corner connection component that is used to create a corner with two Perimeter Tees (SGXWM64). Note: For best results, it is recommended to miter each intersecting perimeter tee.

To secure the intersection, place two (2) 1" fasteners on each leg—for a total of four (4) fasteners to secure the Corner Intersection Bracket as seen in Figure 8.

USG CIMA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

PERIMETER CONDITIONS
FIXED PERIMETER

Figure 9

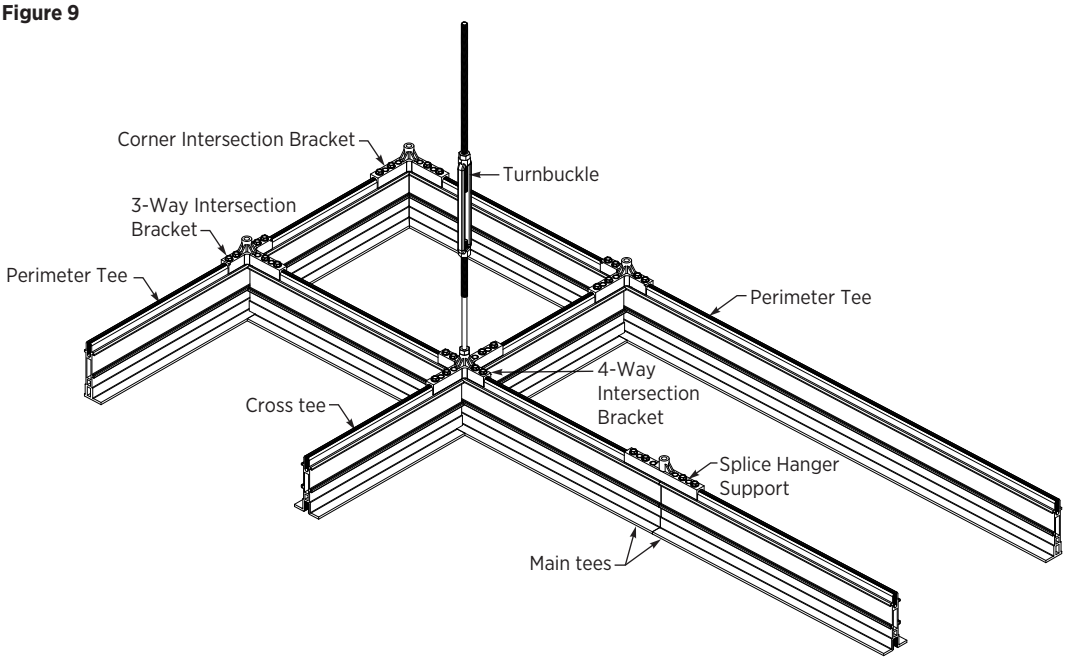
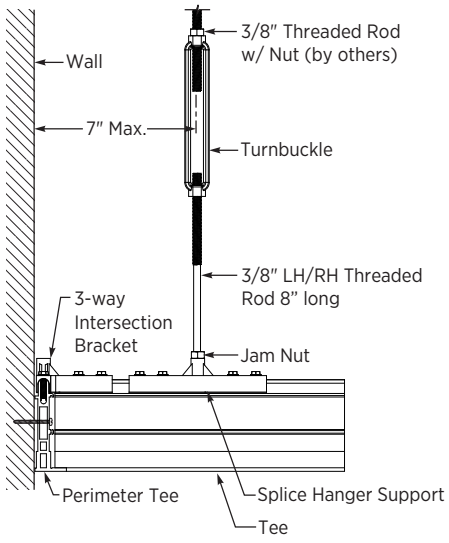


Figure 10



A fixed perimeter requires the use of the SGXWM64 Perimeter Tee. Where the SGXWM64 is fastened to the perimeter wall and a perpendicular Main Tee (SGX64) or Cross Tee (SGX464).

The SGXWM64 and SGX64 or SGX464 will use the 3-Way Intersection Bracket to connect at the intersection point as seen in Figure 10.

Typically, a 3/8" threaded rod and turnbuckle are needed at each intersection, spaced a maximum of 7" from the perimeter wall.

USG CIMA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

PERIMETER CONDITIONS
FLOATING PERIMETER

Figure 11

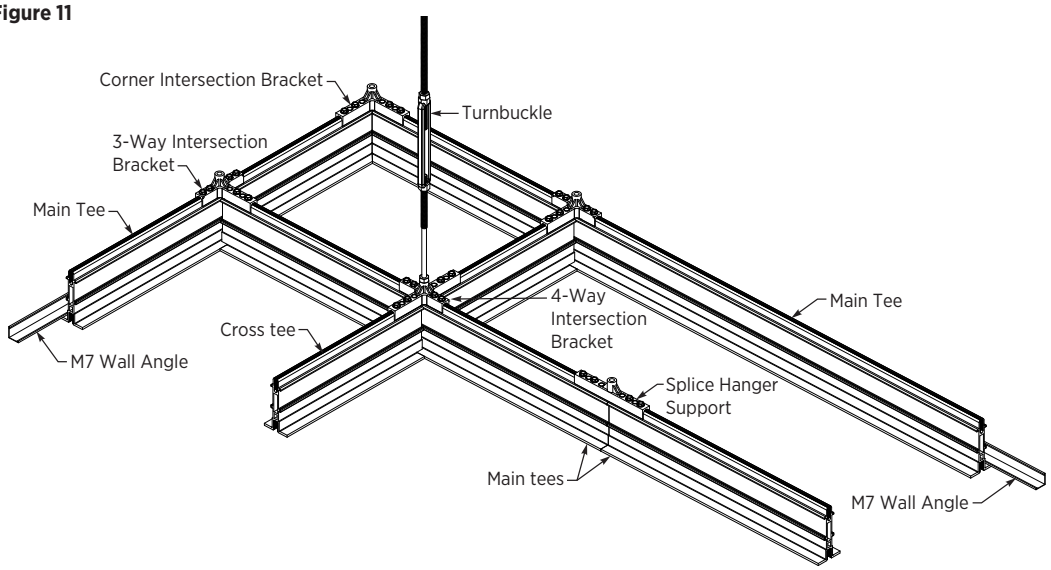


Figure 12

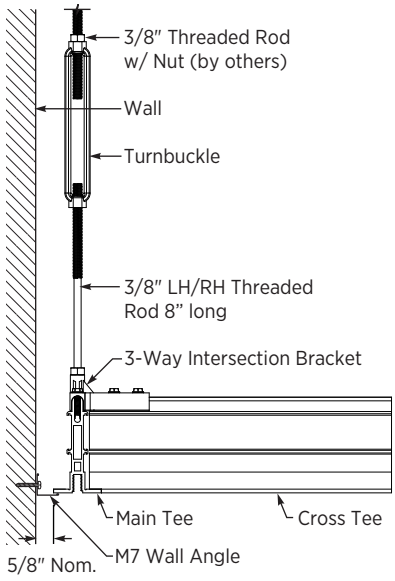
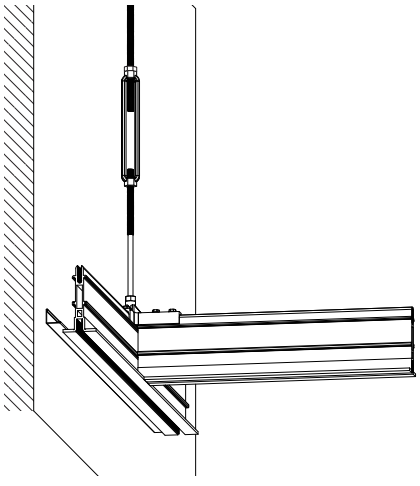


Figure 13



A foating perimeter utilizes a Main Tee (SGX64) or Cross Tees (SGX464) that run parallel to the perimeter wall, providing a gap between the perimeter wall and the floating parallel tee.

The 3-Way Intersection Bracket will be used to connect the floating tee with an intersecting Main Tee (SGX64) or Cross Tee (SGX464) as shown in Figure 12. A 3/8" threaded rod and turnbuckle will be placed at each intersection.

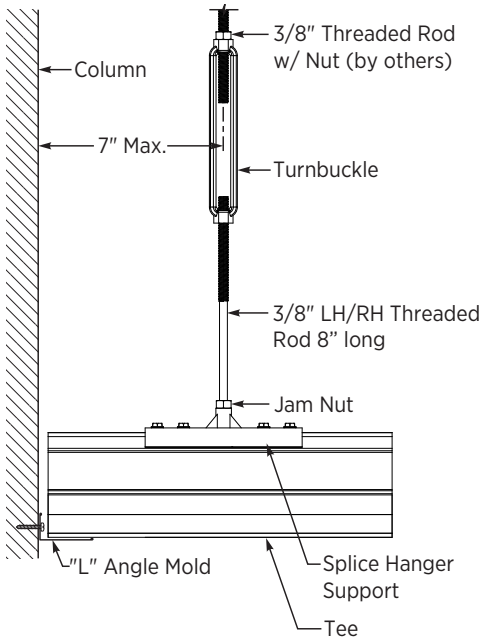
To close off the gap between the perimeter wall, install USG Acoustical Wall Molding M7 (7/8") as seen in Figure 13.

Helpful Hint: M7 wall molding should be aligned and installed before the structural suspension system.

USG CIMA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

COLUMN CONDITIONS

Figure 14



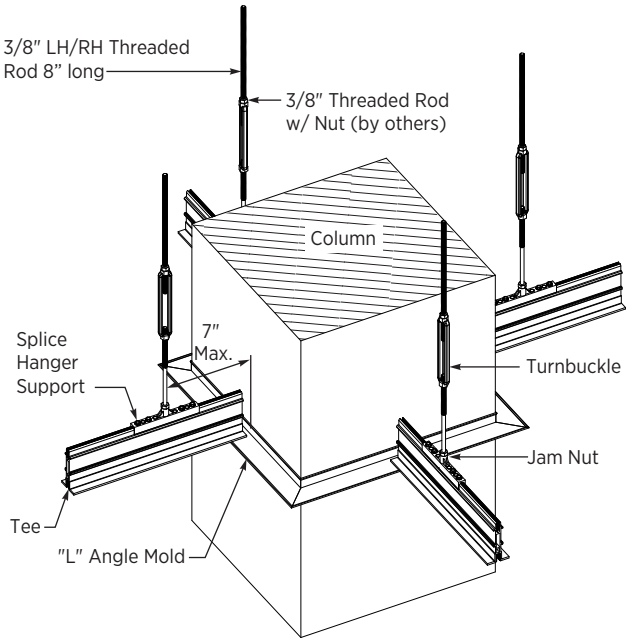
If columns are present within the ceiling plenum, it will be necessary to install the structural grid around the column for a continuous ceiling plane.

Fix "L" angle mold around the perimeter of the column, mitering the corners as shown in Figures 14 and 15..

Main Tees (SGX64) or Cross Tees (SGX464) will need to be cut for length to sit on the bottom leg of the 2" wall molding.

Install the Splice Hanger Support where the threaded rod is—up to 7" from the column perimeter. Fasten the 3/8" threaded rod and turnbuckle to the above structure.

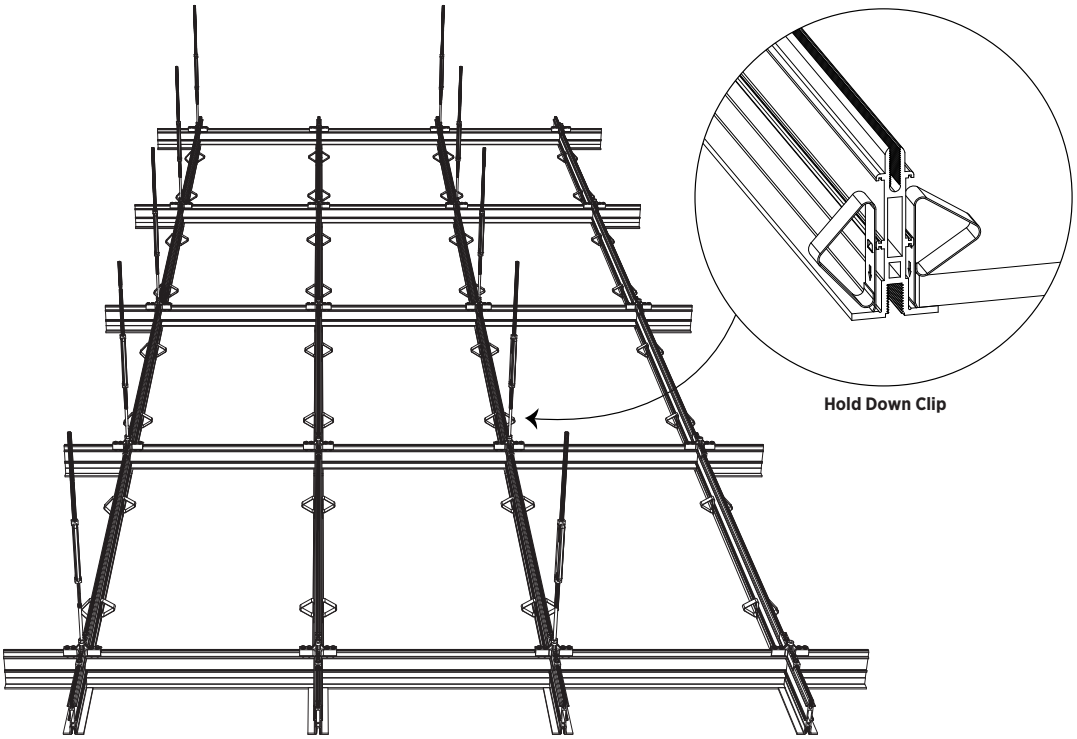
Figure 15



USG CIMA™ STRUCTURAL SUSPENSION SYSTEM INSTALLATION

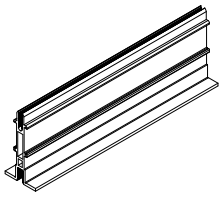
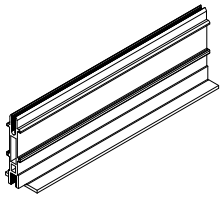
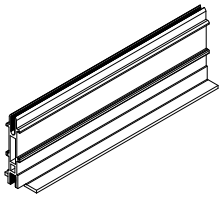
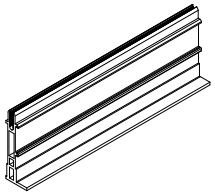
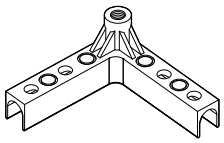
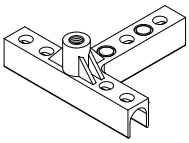
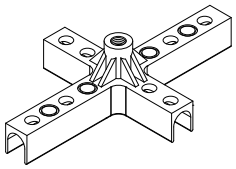
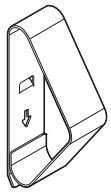
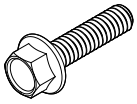
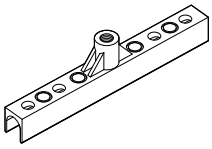
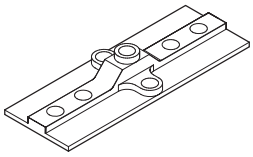
HOLD DOWN CLIP APPLICATION

When application calls for hold down clips, place four (4) Spring Hold Down Clips (SGXACSHC) per module. Each 2x4 panel is held down by hold down clips placed on the 4ft side, 12″ from the end. Each Spring Hold Down Clip is secured without fasteners, simply clip between the track feature on the side of the tee after the panel is in place. The Spring Hold Down Clip applies pressure to the panel and will spring to allow different tile thicknesses.



Hold Down Clip Application

USG CIMA™ STRUCTURAL SUSPENSION SYSTEM COMPONENTS

SGX64 12' Main Tee	**SGX464** 4' Cross Tee	**SGX264** 2' Cross Tee	**SGXWM40** 12' Perimeter Tee
			
SGXIBC Corner Intersection Bracket	**SGXIB3WHD** 3-Way Intersection Bracket	**SGXIB4WHD** 4-Way Intersection Bracket	**SGXACSHC** Hold Down Clip
			
SGXACLW Turnbuckle	**SGXACB** 1/4" Bolt	**SGXSHS** Splice Hanger Support	**SGXDCCA** Clip Assembly
			

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PRODUCT INFORMATION
See usg.com for the most up-to-date product information.

INSTALLATION
Must be installed in compliance with CISCA and standard industry practices, within all applicable code requirements. Alternative assemblies and installation methods may be utilized when approved by the authority having jurisdiction. USG recommends checking with the authority having jurisdiction prior to designing and installing a ceiling system.

CODE COMPLIANCE
The information presented is correct to the best of our knowledge at the date of issuance. Because codes continue to evolve, check with a local official prior to designing and installing a ceiling system. Other restrictions and exemptions may apply.

NOTICE
We shall not be liable for 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 or 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.

SAFETY FIRST!
Follow good safety and industrial hygiene practices during handling and installation of all products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read SDS and literature before specification and installation. Be cautious with exposed sharp edges when handling ceiling system components.

WARRANTY
See USG Ceilings Commercial Application Warranty (SC2102) for additional details.

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CG428476/2-26

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