



## T-GRID SYSTEM 1.1 2" WIDE CLEANROOM CEILING GRID SYSTEM

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***Updated: 4-18-2012***

### **OVERVIEW**

The CleanPro T-Grid System 30" is designed for carrying the load of standard filter modules for Class 10 to Class 100,000 Cleanroom areas. The T-1.1 is a 2" (50mm) wide gasket-seal ceiling grid system comprised of 2" (50mm) wide extruded aluminum tee members that are bolted together to form a continuous gasketed ledge to receive HEPA or ULPA filters for ultra-clean manufacturing environments. Each T-1.1 grid member comes factory pre-cut. The T-1.1 grid system is suspended with 3/8-16 threaded rod with turnbuckles. The T-1.1 main connectors are designed for 4-way intersections. The Zinc Die Cast part is cut for other connectors when used for splice, three-way, inside corners, outside corners and outside-edge-perimeter connections. The clip is top mounted to the T-1.1 grid which inter-connects to the top Threaded Boss with 1/4-20 hardware. The Zinc Die Cast connector has been specially designed to engage with the top Upper area of the main runners and cross Tee sections for accurate grid alignment. All T-1.1 grid intersections are designed for straight cuts to facilitate ease of construction on the job site.

The T-1.1 main-runners, cross-runners and wall-angles are supplied with a powder coat white finish. The sections are shipped in boxes interwoven with paper for protection. The boxes are placed on skids for further protection. The carton sizes are kept to a minimum weight for ease of handling on the job site. For large projects the grid sections may be "Master-packed" for savings when shipping directly to the job site from our aluminum extruder.

The T-1.1 grid sections are cut for a standard layout of 24 1/2" x 48 1/2". This will utilize a 46 1/2" length cross Tee. The T-1.1 main runner and wall angle are provided in 12'-0" lengths. This layout arrangement will fit most or all standard Filter modules used in the industry. The most commonly used sized Filter module is 23 5/8" x 47 5/8". Light fixtures are also available that fit this grid layout arrangement. They are designed for the lens to fit the 22 1/2" x 46 1/2" opening with this grid layout pattern.

The T-1.1 grid system can also be used when a 24" x 48" or 48" x 48" layout is required. This will use filter modules that are 23" x 47" or 47" x 47".

The upper part of the T-1.1 main runner, cross T and wall angle is extruded with a 1/4-20 threaded boss. This threaded boss is used for captivating the Zinc Die casting to the extrusion with standard 1/4-20 x 3/4 hex head bolts or 1/4-20 x 3/4 Philips pan head screws. This top thread boss allows for securing a zinc die cast connector anywhere along the top of the extrusion main runners or cross tees. . This top slot can also be used for mounting or clamping down blank panels, filters and light fixtures with the appropriate tie down hardware.

Each Zinc Die cast connector is tapped, providing for hanging with 3/8" threaded rod. The recommended hanging center distance is nominally 48" x 48" centers. If the grid system chosen is a 24 1/2" x 48 1/2" system the hang centers will be 49" x 48 1/2". It is recommended that an interstitial Strut support system be used in conjunction with the grid system for ease of installation and leveling. The system is provided with 3/8" x 8" threaded rods with both Right hand and Left hand threads to be used in conjunction with a 7" body turnbuckle. Enough of these assemblies will be provided for suspension on 4x4 centers. The threaded rod from the turnbuckle up is by others. See drawing layouts for recommendations.



## T-GRID SYSTEM'30

### INSTALLATION, OPERATION, MAINTENANCE INSTRUCTIONS CLEANROOM CEILING SYSTEM

*Updated: 6/12/2011*

#### **SHIPPING, RECEIVING**

When your shipment arrives either on pallets or crates, inspect for any external damage that may have occurred during shipping. Note any damages to the delivering carrier. It is your responsibility to file a freight claim with the carrier at the time of receiving the package. Take pictures to prove that freight damage has occurred.

After receiving, check to make sure that all the packages, boxes, pallets or crates have been delivered. Unpack the packages carefully to avoid any damage to the components or painted members. This is a good time to get familiar with the components.

#### **SUPER-STRUT GRID SUPPORT SYSTEM**

The grid system has been designed to be suspended with 3/8-16 threaded rod, turnbuckles including a RH-LH threaded rod connection to the grid system. The T-I grid Uystem 30" is supplied to the job site from the turnbuckle down. Any additional support including the threaded rod from the turnbuckle and the super-strut intermediate grid supports is by others. The grid has been supplied with enough turnbuckles for a grid support on a nominal 4' x 4' center distance. See drawings for location of turnbuckles. The turnbuckles are generally located at the 4-way intersection of the grid system. The grid system main runners are spaced either 48" or 48.5" from each other. The super-strut is run perpendicular to the main runners on 49" centers when the grid is placed on a 24.5" x 48.5" center distance. Any additional support with the T/I grid Uystem 30" shall be done anywhere on from the top profile using a splice connection with provision for another 3/8" rod.

#### **GRID INSTALLATION**

Refer to the Architectural drawings for the grid system layout along with the Super-strut layout. This will show the hang point locations for the grid system. The grid system should be laid out to the design of the ceiling.

Generally the wall angle is installed first. Always use a laser to install the grid. Continue to use the laser to level all the grid components. The use of adjustable turnbuckles will ease the leveling of the grid system. Once the wall angle has been installed find a datum point for installing the first piece of main runner. Do not measure from clip, to clip, to clip, to avoid tolerance build up. Always continue to double check your layout to make sure that you are within design plans and that the grid is being installed perpendicular to the walls and that the grid is level. The system installs easily if good

planning is followed. If the clips are installed on the correct locations on the main runners the cross t-bars will automatically self align with each other. Note: it is a good idea to run your main runners, so that a splice occurs between 4-way intersections. The grid is not designed for splices of the main runners to occur at 4-way intersections.

Use a good 80-100 tooth carbide tip triple chip blade with a good miter saw to finish end cuts of the main runners, wall angle and cross t-bar extrusions.

I cannot emphasize enough that the start point and the continued measuring is the most important part of a good grid installation.

## **GASKET INSTALLATION**

After the grid has been installed, it is advisable to wait until all other trades are finished in the space if this is possible. At this time clean the grid with a water and alcohol wipe down. Install the gasket after the grid has been wiped clean. Install the gasket tape with the adhesive side to the grid. Note: leave the paper on while applying the gasket. Apply the gasket all around the inside edge of the t-bar leaving at least a 1/8" space from the inside edge of the open space on the t-bar ledge. When coming to a corner pinch the gasket and turn the corner. When coming to the end of a complete 2x4 opening overlap the gasket or butt joint the gasket at this point. It is important not to stretch the gasket but to apply the gasket to the top grid surface. Leaving the paper on the top during installation will help with not allowing the gasket to stretch. After the gasket is applied rub the top of the paper on the gasket to seat the gasket to the grid runner, then remove the paper and proceed to the next grid opening. Prior to gasket installation check to make sure that your particular order is or is not using light fixtures, filters or blank panels with pre-installed gasket on the downstream side. If this is the case do not put gasket on the grid in their respective locations. Note: In some cases it might be advisable to not install the gasket on the grid system but to apply the gasket to the bottom of filters, light fixtures and blank ceiling tiles. This is a good way to go since you can clean the tee bar from any construction dust prior to installing the components into the grid system.

## **FILTER, LIGHTS AND BLANK INSTALLATION**

After the grid and gasket have been installed it is now time to install the ceiling grid components. Always take care when installing HEPA or ULPA filters. Generally the light fixtures are the first components to be installed followed by the filters and then the blank panels. At this time the fire protection system has already been installed either through the grid or in the blank panels. Make sure that when installing the ceiling components that you do not damage the gasket. Be sure to place the components on the t-bar; do not slide the components over the gasket to avoid tearing the gasket.

## **TOOLS REQUIRED FOR INSTALLATION**

An industrial miter saw is recommended for all cuts. Use a high quality 10" diameter triple chip carbide tip saw blade with 80-100 teeth. After cutting de-bur the end of the cuts as necessary. The 4-way connector clips each require (8) 1/4-20 x 3/4" hex head cap screws. The 3-way connectors each require (6) 1/4-20 x 3/4" hex head cap screws.

Use a laser level to level all grid components or to transfer the grid layout from the floor up. Note: a laser can also be used to locate all hang points on the super-strut intermediate grid support.

## **GRID COMPONENTS**

1. **Main Runner** – Powder coated white aluminum, 12'-0"
2. **Cross Runner** – Powder coated white aluminum, 46 ½" or 46"
3. **Wall Angle** – Powder coated white aluminum, 12'-0"
4. **4-Way Intersection Connector** – zinc die casting
5. **Splice Connector** - Main Runner – zinc die casting
6. **Splice Connector** – Perimeter for Wall Angle – zinc die casting
7. **Three-Way Connector** – zinc die casting
8. **Three-Way Perimeter Clip** – zinc die casting
9. **Inside Corner Clip** – zinc die casting
10. **Outside Corner Clip** – zinc die casting
11. **Turnbuckle** – 3/8-16, 7" body, roll formed, zinc plated
12. **Threaded Rod** – RH-LH – 8" long zinc plated
13. **Philips Pan Head Screw** – ¼-20 x 3/4" Philips Pan Head zinc plated, used for perimeter
14. **Hex Head Bolt** ¼-20 x ¾ , for connection of all castings to grid threaded screw boss
15. **Gasket** - 3/16" Thick x 3/8" Wide Closed Cell Lite Grey PVC Gasket – adhesive one side, provided for field installation on the top ledge of the T-Bar and Wall angle extrusion profiles

## **OPTIONS**

1. **Sprinkler Drop:** provision for Flex-head Sprinkler Drop in Cross Runner
2. **Custom Cut Castings:** provided as required
3. **Factory applied Gasket:** 3/16" thick x 5/8" Wide Closed Cell Lite Grey PVC Gasket – adhesive one side, applied to the top flange of the Tee Bar and Wall Angle Extrusion profiles 1/8" from the outside edge of the flange. Cut ¼" longer than the extrusion profile.

## **CLEANPRO LIMITED WARRANTY**

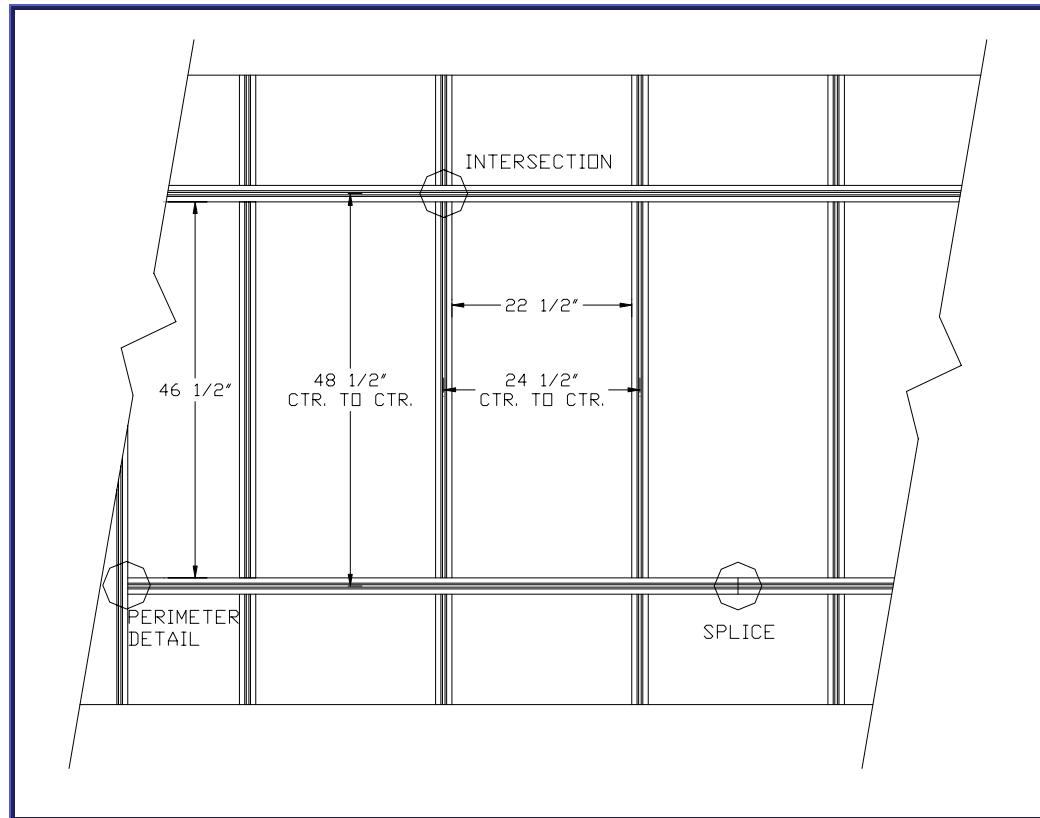
CleanPro will repair or replace any parts or products which fail because of workmanship or materials at no charge for the cost of parts, materials or transportation to the original purchaser for a period of one year from the date of purchased delivery. At CleanPro's option, such repairs or replacement will be undertaken at the purchaser's site or CleanPro's facility. The purchaser shall be responsible for all labor or installation charges concerning the product. The products which have been repaired or replaced by CleanPro will be warranted for the remainder of said one year original warranty.

1. Goods returned to CleanPro without its prior consent and approval will not be accepted.
2. The purchaser must notify CleanPro under the limited warranty within a reasonable time after discovery, but notice shall not be received after 30 days the date of the defect to which the claim related is discovered or should have been discovered.
3. CleanPro must be given opportunity to inspect the product and be satisfied that it has been subject to use and service in accordance with its designed use, and that there exists a defect in workmanship or materials not caused by the misuse, accident or improper installation, maintenance or application of the product.
4. Under no circumstances will CleanPro be responsible for any freight (in or out), installation, or removal or reinstall cost.

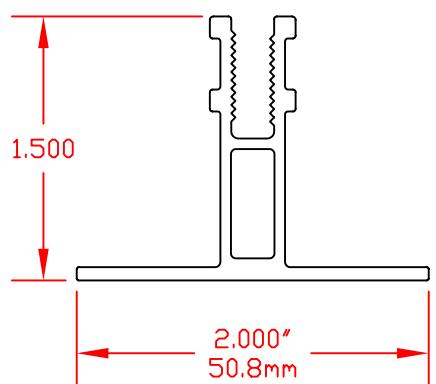
CleanPro disclaims all other warranties, express or implied, including any warranty of merchantability, fitness for a particular use or otherwise.



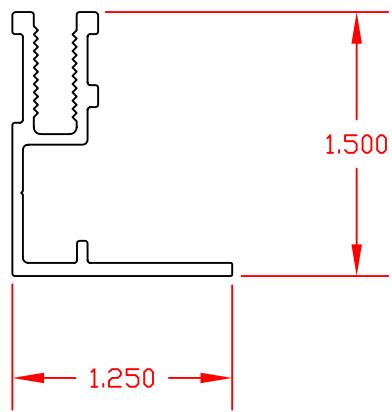
## T-1&2 GRID SYSTEMS 2" WIDE CLEANROOM CEILING GRID SYSTEMS



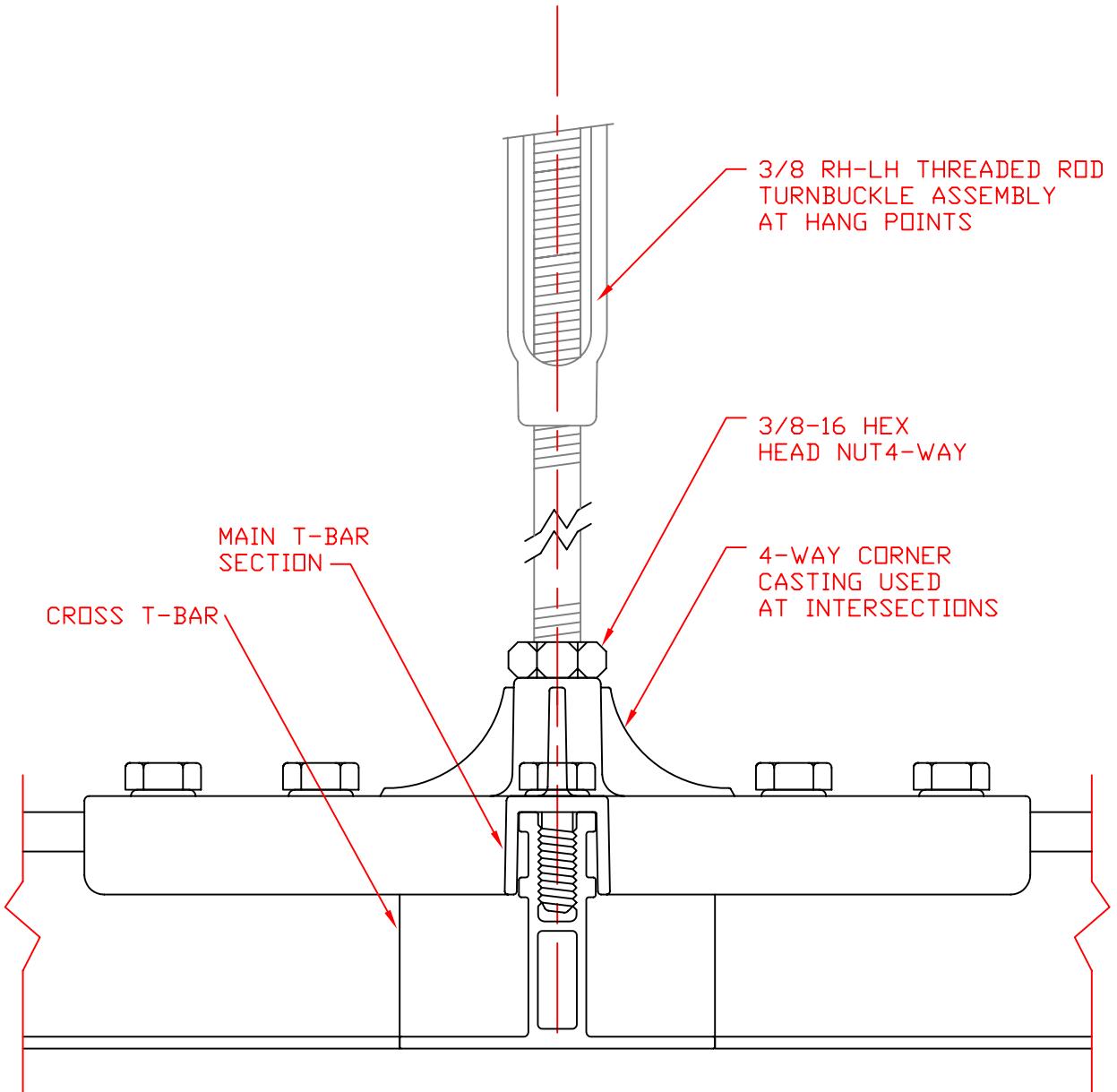
**TYPICAL GRID PLAN  
(24 1/2" X 48 1/2" CENTERS)  
T-1&2, 2" WIDE GRID SYSTEMS**



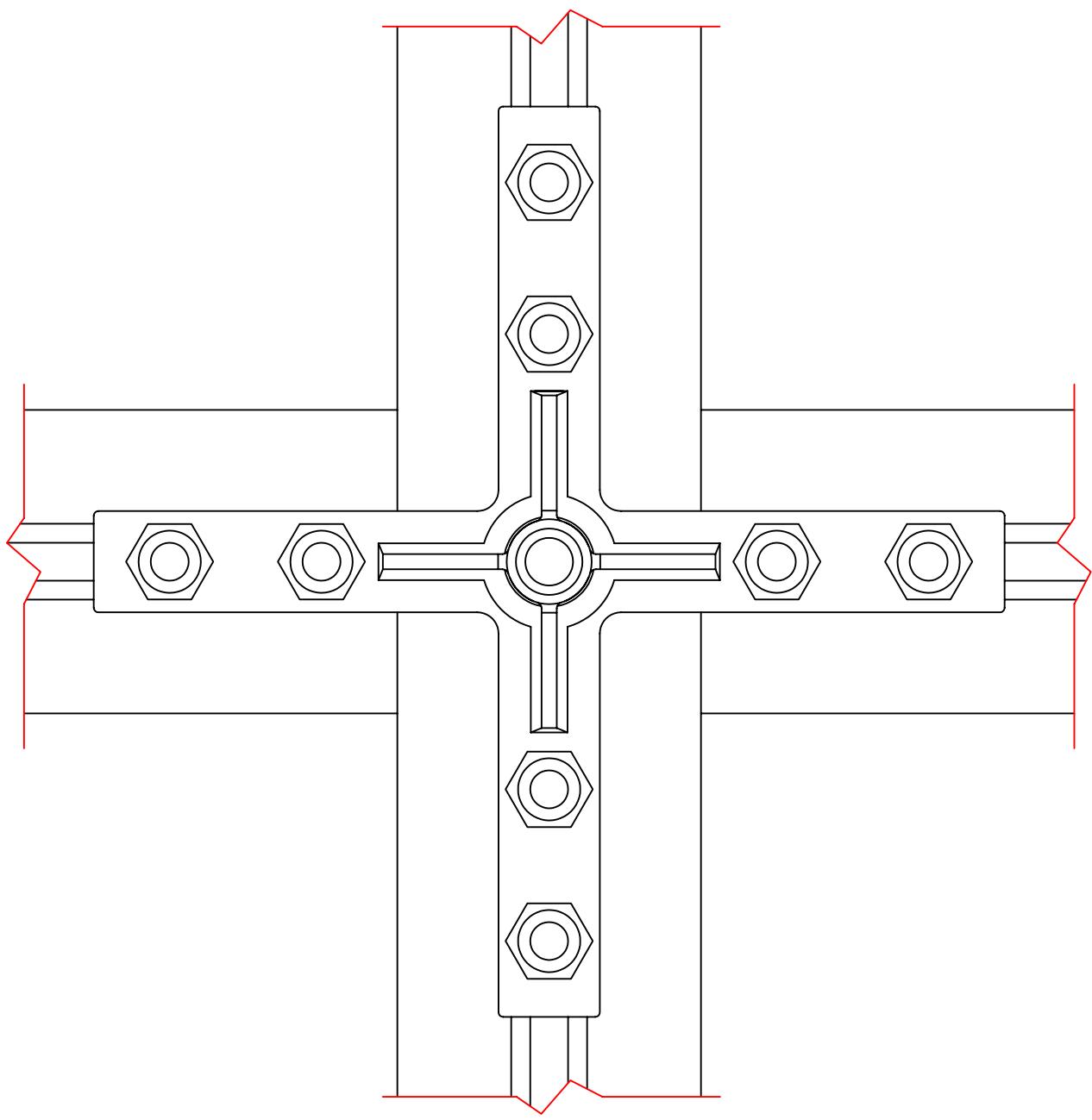
MAIN TEE SECTION



WALL ANGLE  
EXTRUSION



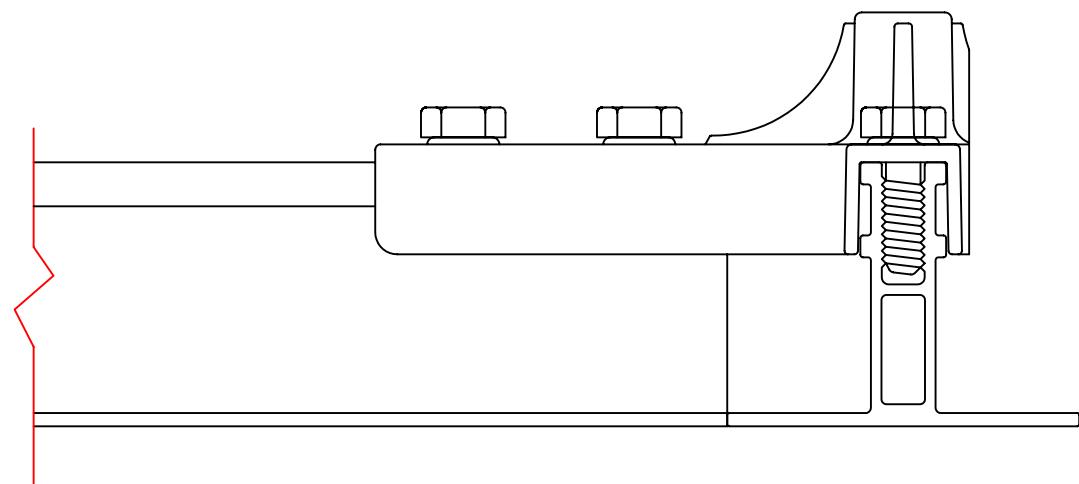
MAIN TEE  
4-WAY INTERSECTION



4-WAY  
INTERSECTION  
TOP VIEW

T-GRID SYSTEM 1.1

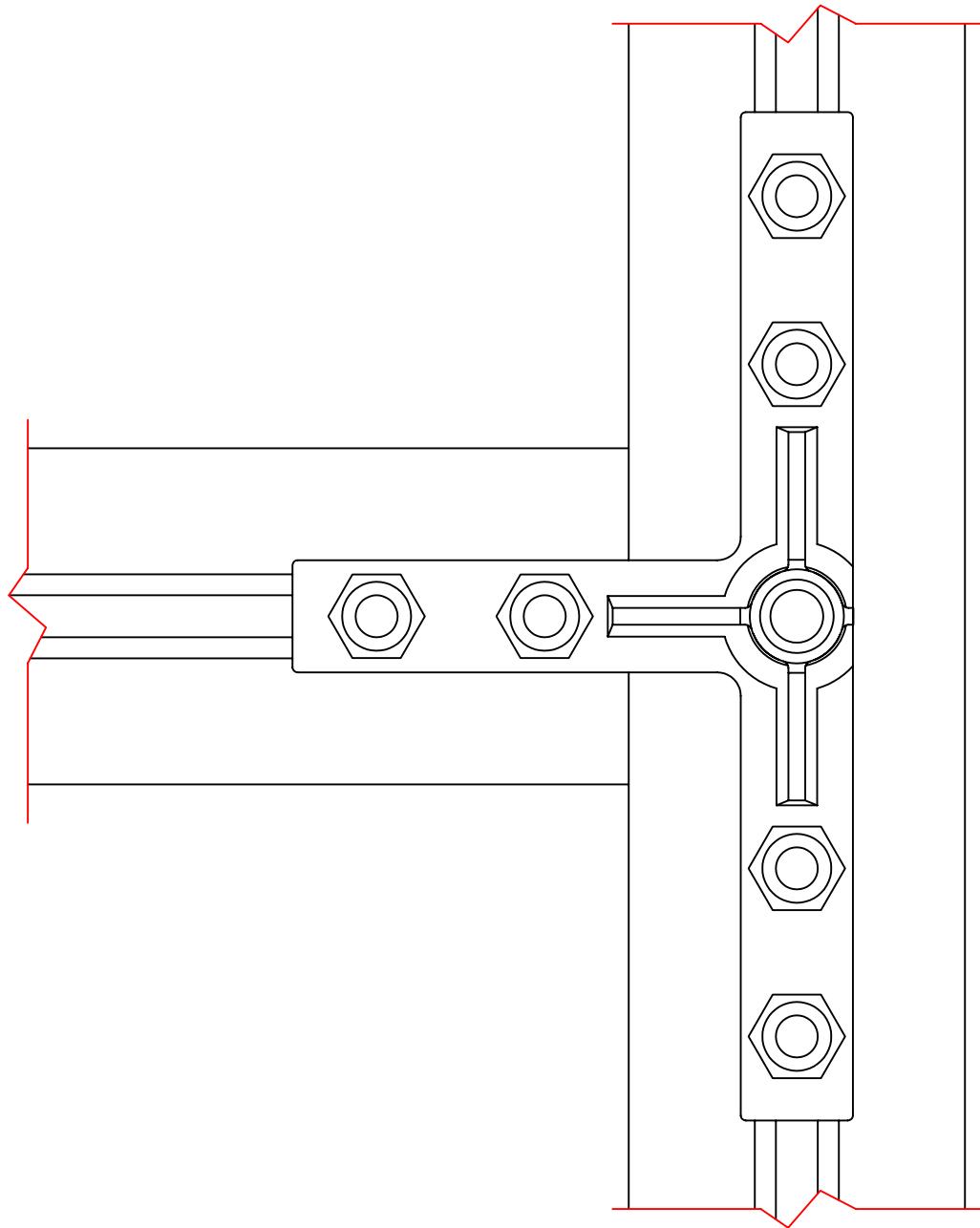
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3-WAY  
INTERSECTION  
SIDE VIEW

T-GRID SYSTEM 1.1

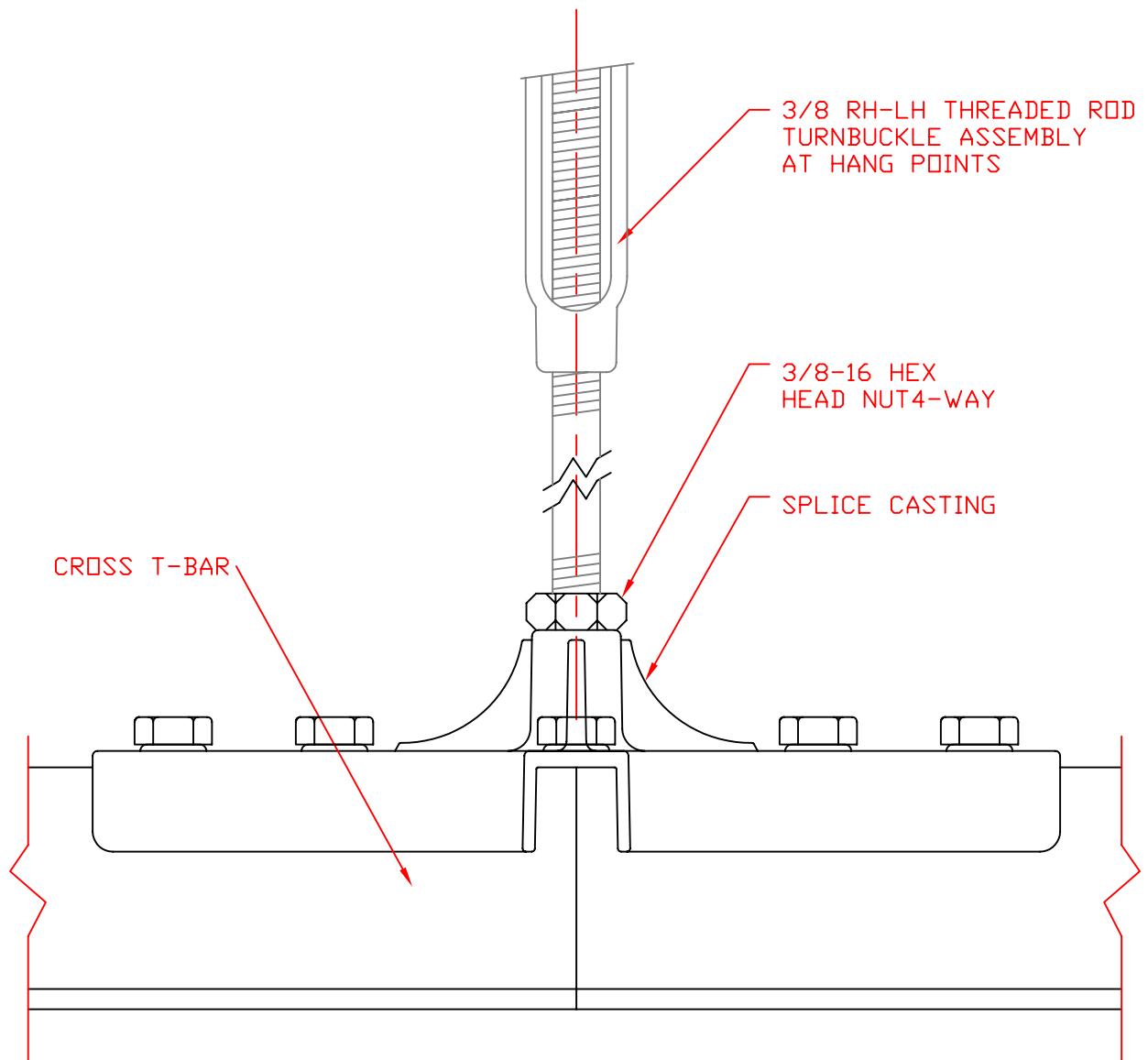
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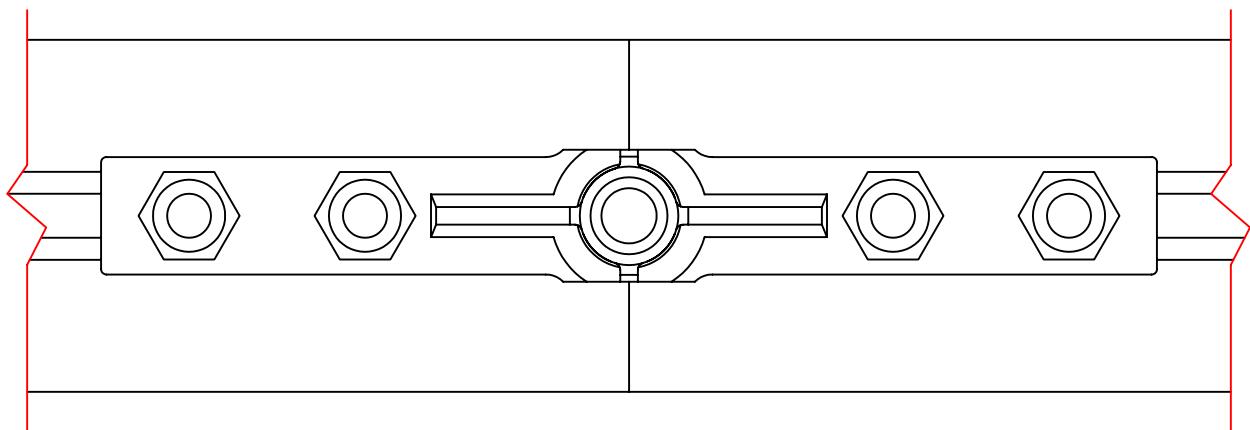
3-WAY  
INTERSECTION  
TOP VIEW

T-GRID SYSTEM 1.1

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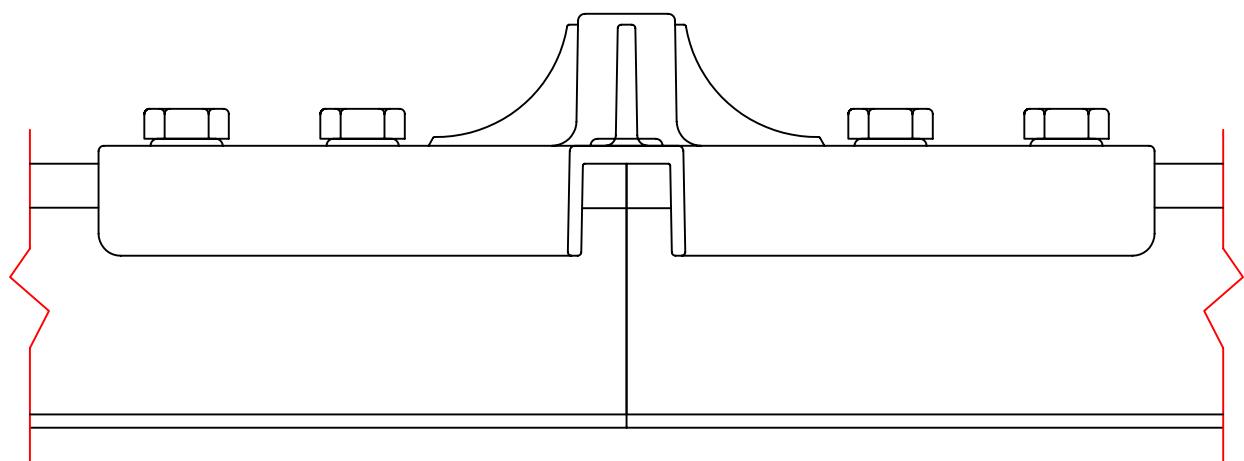
SPLICE  
INTERSECTION  
SIDE VIEW



SPLICE  
INTERSECTION  
TOP VIEW

T-GRID SYSTEM 1.1

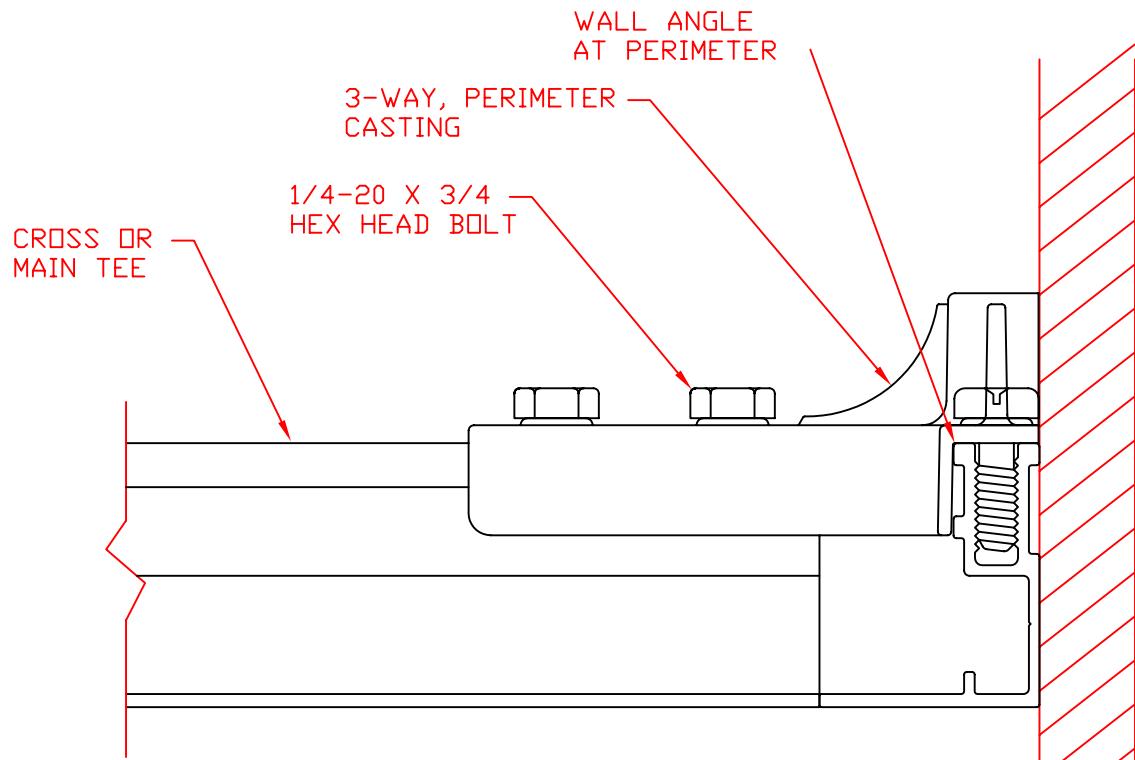
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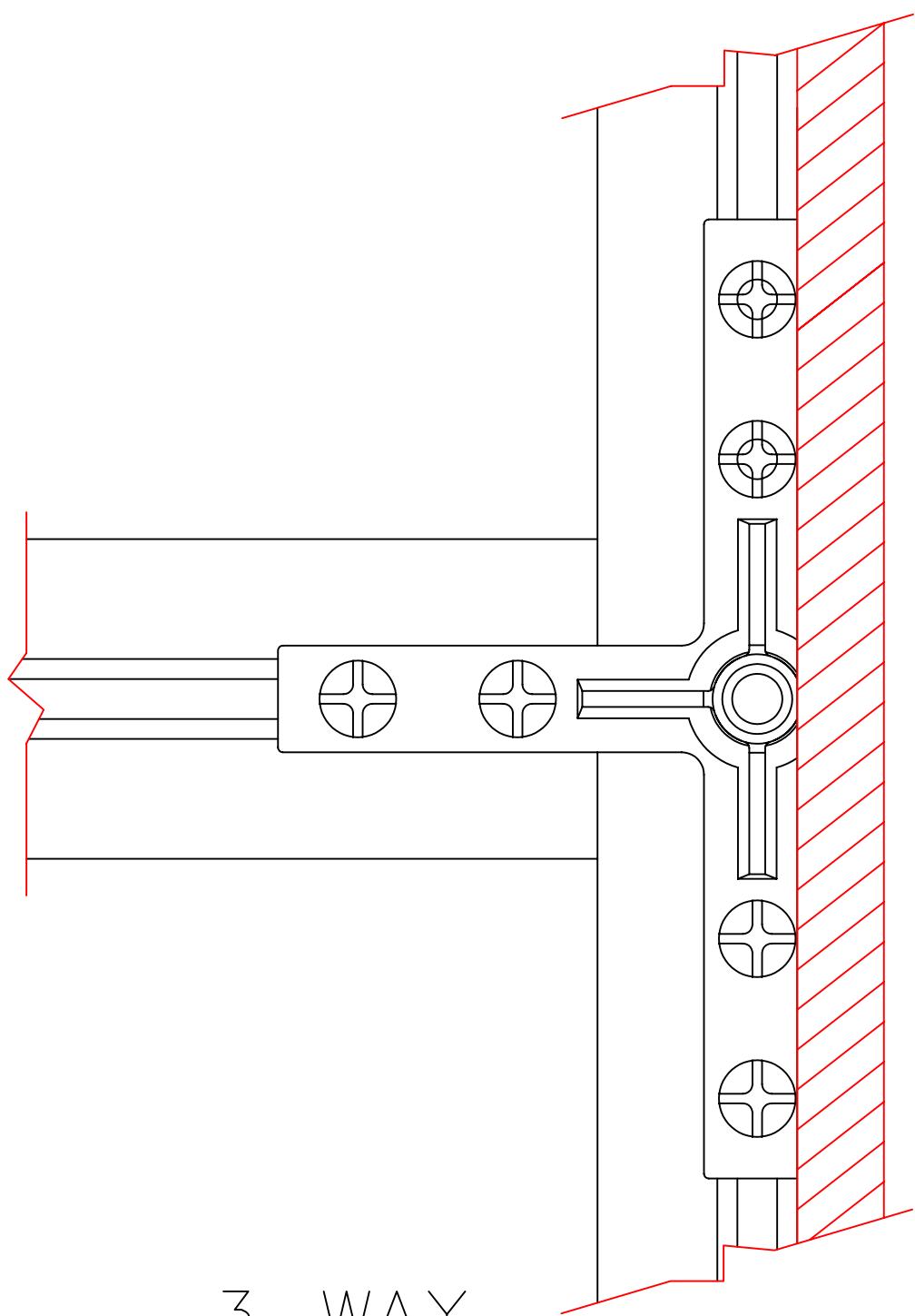
IN-LINE SPLICE  
SIDE VIEW

T-GRID SYSTEM 1.1

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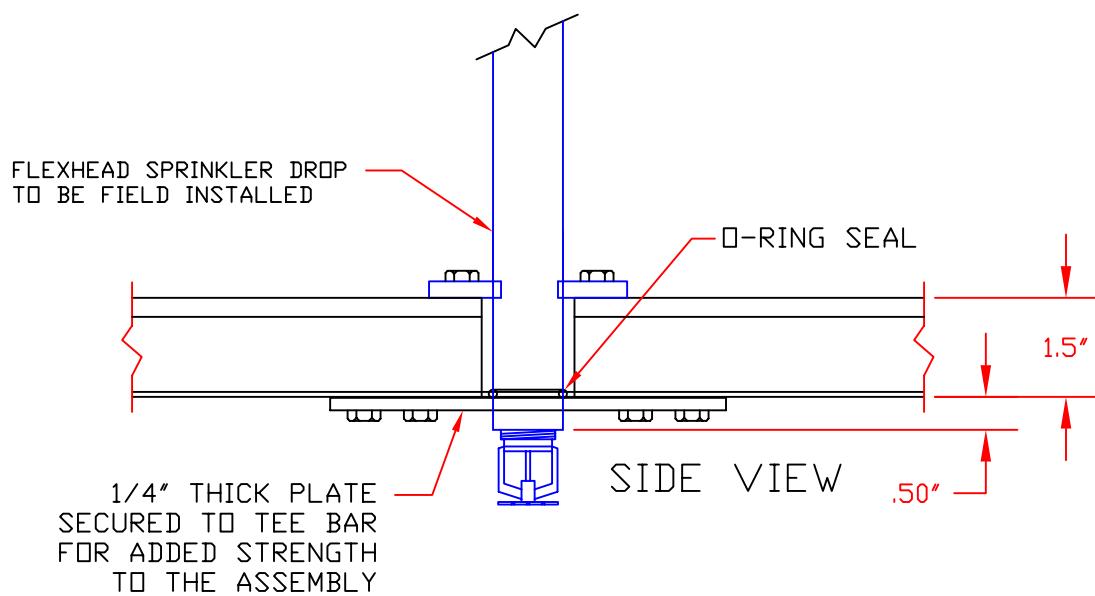
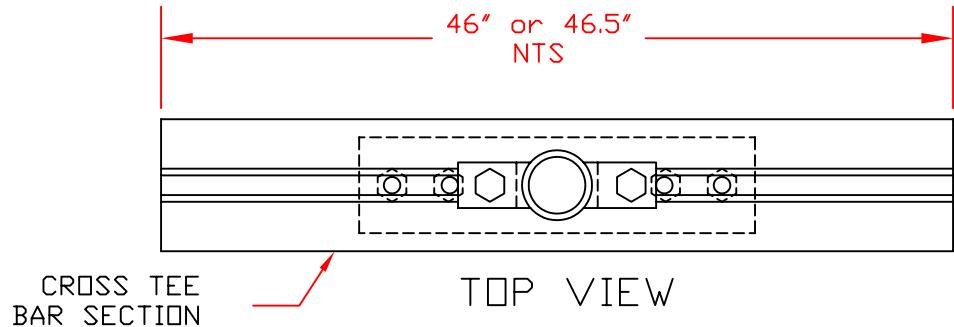
## PERIMETER INTERSECTION



3-WAY  
PERIMETER TO WALL  
TOP VIEW

T-GRID SYSTEM 1.1

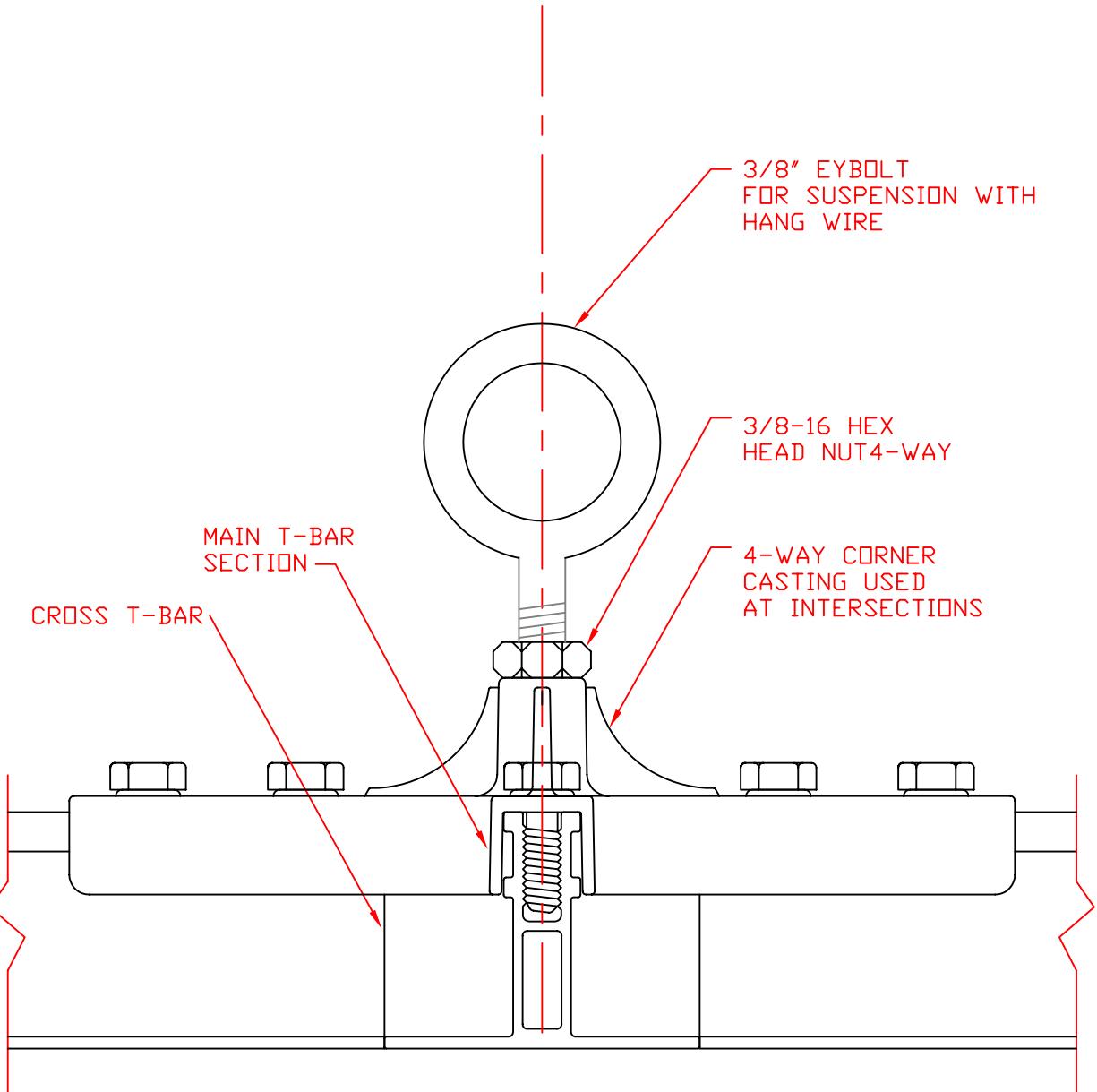
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SPRINKLER DROP ASSEMBLY  
CROSS TEE OF TRAX-1.1 GRID  
NTS

T-GRID SYSTEM 1.1

L



MAIN TEE  
4-WAY INTERSECTION  
WITH EYEBOLT SUSPENSION