**CONNECTION GUIDE**

**The following guide illustrates the recommended primary connection types to Polargy's PICS Ceiling Grid. Threaded rod mounted directly to the grid should be avoided.**

## HAT "U" BRACKET CONNECTION

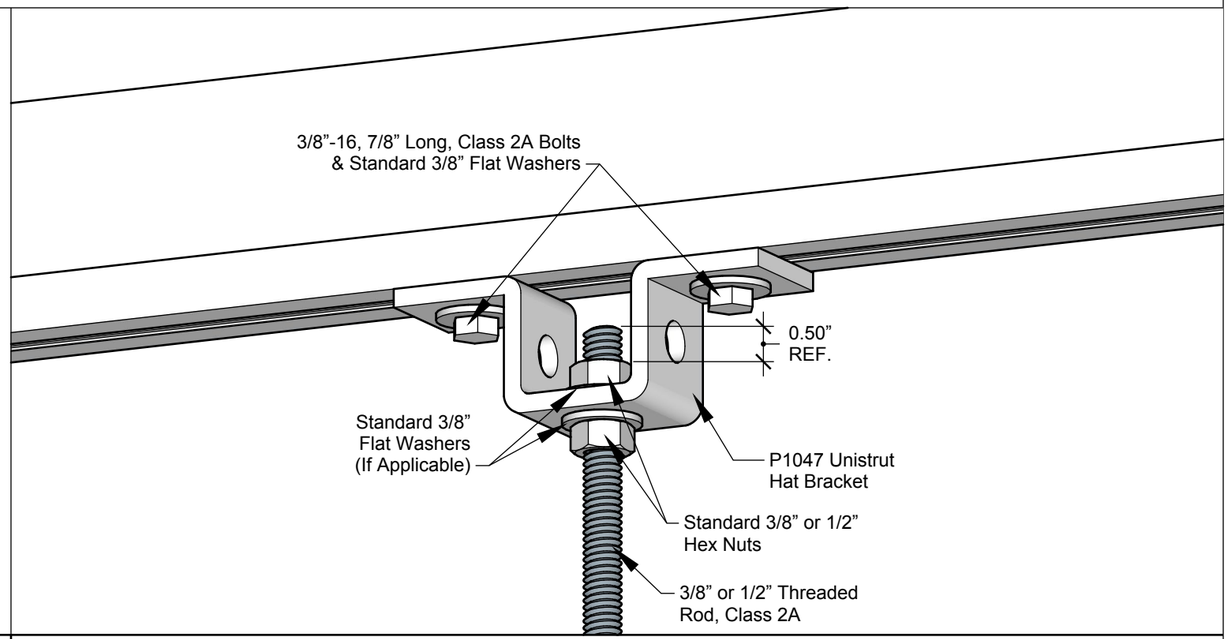
- Use Unistrut Hat "U" shape fitting P1047, P3047, P4047, or equivalent.

- Attachment Hardware
  - Two (2) 3/8"-16, 7/8" long, Class 2A bolts
  - Two (2) standard 3/8" flat washers (one per bolt)

- Torque bolts to 100in-lbs.

- Connect threaded rod to hat bracket (a recommended 1/2" of rod should extend up beyond the upper hex nut):
  - 1/2" threaded rod should be secured with standard 1/2" hex nuts on either side of the hat bracket.
  - 3/8" threaded rod should be secured with standard 3/8" hex nuts and flat washers on either side of the hat bracket as shown.

Notes:
1. Torque not to exceed 120in-lbs at the risk of stripping the extrusion. Appropriate care should be taken to not exceed this limit.
2. 3/4" length bolts are appropriate for all connections in which the plate/bracket/washer combined thicknesses are less than or equal to a 1/4".




## HOT AISLE CONTAINMENT CONNECTION

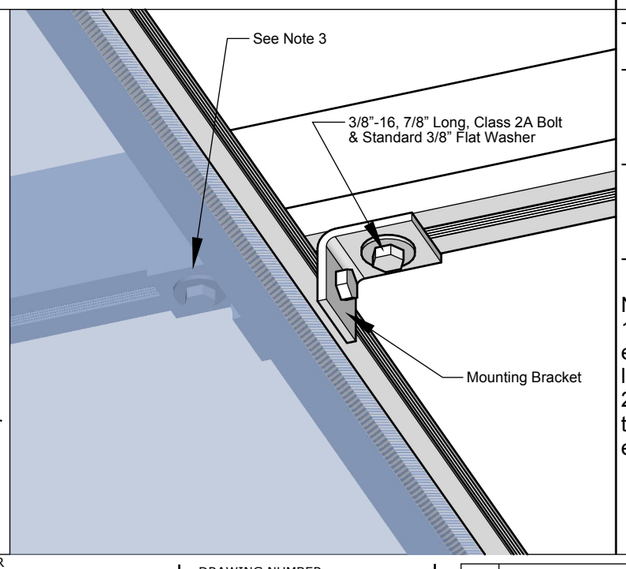
- Use one (1) mounting bracket per connection point.

- Attachment Hardware
  - One (1) 3/8"-16, 7/8" long (if bracket is thicker than 1/4"), Class 2A bolt
  - One (1) standard 3/8" flat washer

- Connect HAC to ceiling grid using one (1) bracket at a maximum span of every 4' (when possible).

- Torque bolt to 100in-lbs.

Notes:
1. Torque not to exceed 120in-lbs at the risk of stripping the extrusion. Appropriate care should be taken to not exceed this limit.
2. 3/4" length bolts are appropriate for all connections in which the plate/bracket/washer combined thicknesses are less than or equal to a 1/4".
3. If additional loads are to be supported by the HAC, a second mounting bracket can be added to the inside as an extra connection point to the ceiling.




## MISC. CONNECTION

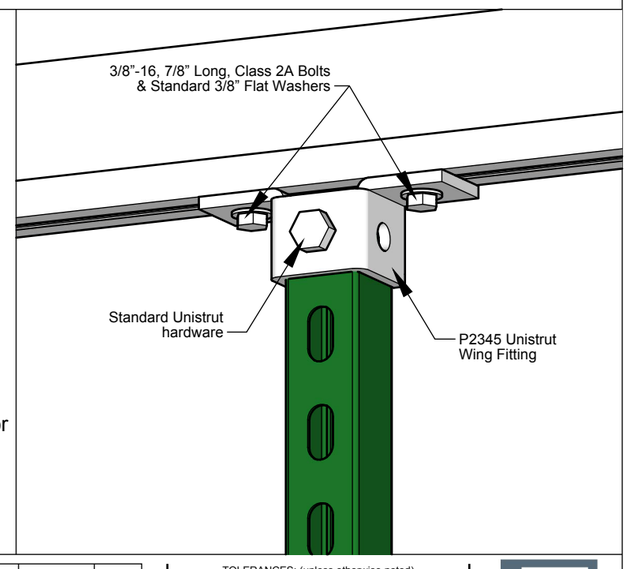
- Use Unistrut Wing shape fitting P2345, or equivalent.

- Attachment Hardware
  - Two (2) 3/8"-16, 7/8" long, Class 2A bolts
  - Two (2) standard 3/8" flat washers (one per bolt)

- All miscellaneous connections to PICS ceiling grid should be done using a symmetrically bolted fitting as shown. A bracket on only one side should be avoided.

- Torque bolts to 100in-lbs.

Notes:
1. Torque not to exceed 120in-lbs at the risk of stripping the extrusion. Appropriate care should be taken to not exceed this limit.
2. 3/4" length bolts are appropriate for all connections in which the plate/bracket/washer combined thicknesses are less than or equal to a 1/4".

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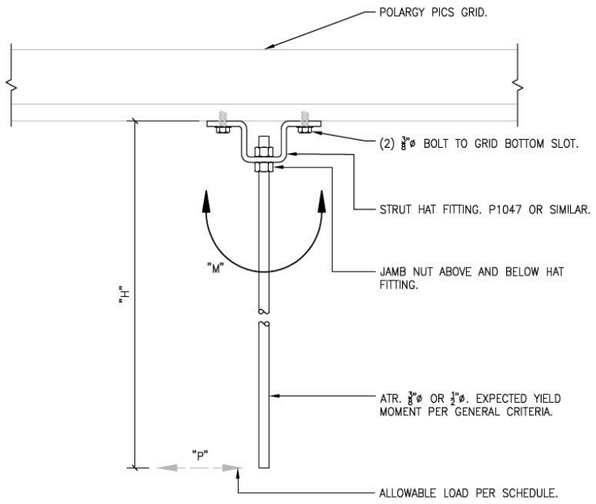
Metric: .X = ±.38mm, .XX = ±.25mm, .XXX = ±.13mm
Angles: ±1/2°
Finish: 64
Fractional: ±1/64"
Break corners & edges .010" [.25mm] max.
Remove all burrs.
All dimensions in inches unless otherwise specified.

POLARGY

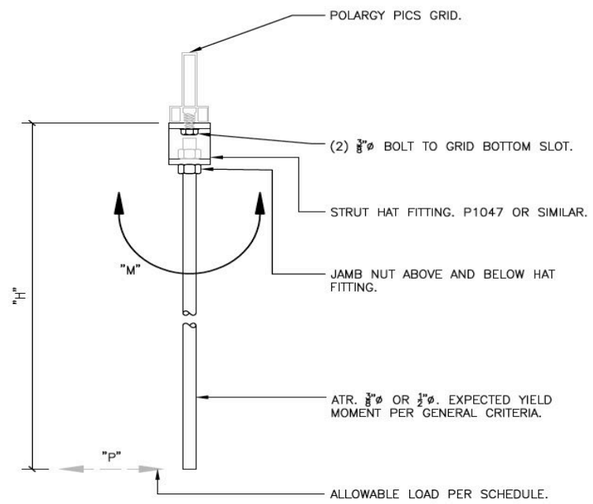
**CONNECTION CAPACITY**

**The following diagrams & tables illustrate the maximum suitable capacity limits during construction/abuse loading for the primary connection type to Polargy's PICS Global Ceiling Grid. Note: ATR performance is an approximate real world limit and exceeds code.**

# HAT "U" BRACKET CONNECTION




LOAD PARALLEL w/ FITTING:




LOAD PERPINDICULAR w/ FITTING:

**Hat Connection**
**Longitudinal Maximum Loading Schedule**

| Max. Height "H" | Allowable Load "P" | 1/2" ATR Performance | 3/8" ATR Performance |
|---|---|---|---|
| 6" | 159lbs | Yield at 125lbs | Yield at 50lbs |
| 12" | 80lbs | Yield at 63lbs | Yield at 25lbs |
| 18" | 53lbs | Yield at 42lbs | Yield at 17lbs |
| 24" | 40lbs | Yield at 31lbs | Yield at 13lbs |
| 30" | 32lbs | Yield at 25lbs | Yield at 10lbs |
| 36" | 27lbs | Yield at 21lbs | Yield at 8lbs |
| 42" | 23lbs | Yield at 18lbs | Yield at 7lbs |
| 48" | 20lbs | Yield at 16lbs | Yield at 6lbs |
| 54" | 18lbs | Yield at 14lbs | Yield at 6lbs |
| 60" | 16lbs | Yield at 13lbs | Yield at 5lbs |

**Hat Connection**
**Transverse Maximum Loading Schedule**

| Max. Height "H" | Allowable Load "P" | 1/2" ATR Performance | 3/8" ATR Performance |
|---|---|---|---|
| 6" | 141lbs | Yield at 125lbs | Yield at 50lbs |
| 12" | 70lbs | Yield at 63lbs | Yield at 25lbs |
| 18" | 47lbs | Yield at 42lbs | Yield at 17lbs |
| 24" | 35lbs | Yield at 31lbs | Yield at 13lbs |
| 30" | 28lbs | Yield at 25lbs | Yield at 10lbs |
| 36" | 23lbs | Yield at 21lbs | Yield at 8lbs |
| 42" | 20lbs | Yield at 18lbs | Yield at 7lbs |
| 48" | 18lbs | Yield at 16lbs | Yield at 6lbs |
| 54" | 16lbs | Yield at 14lbs | Yield at 6lbs |
| 60" | 14lbs | Yield at 13lbs | Yield at 5lbs |



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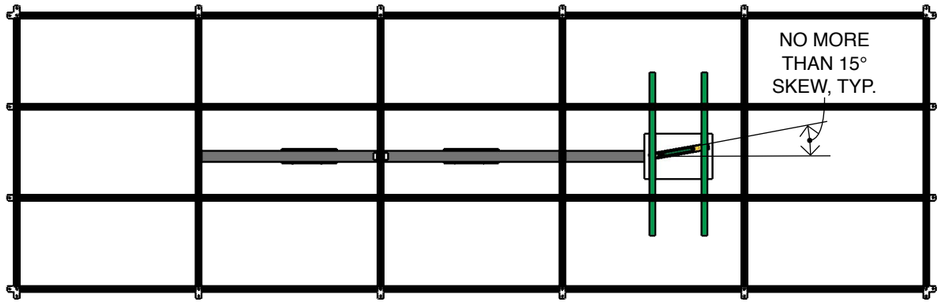
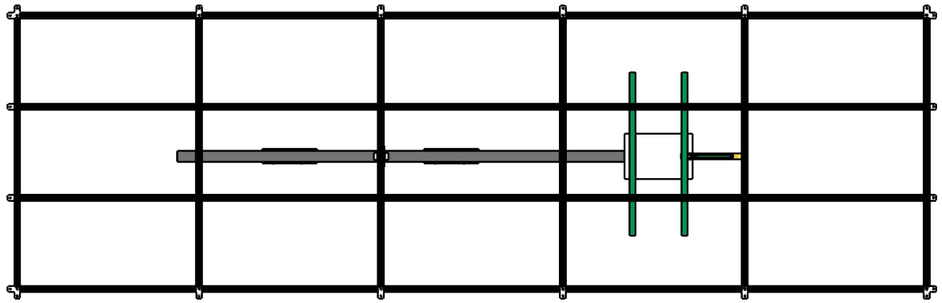
POLARGY

**BUSBAR BRACING**

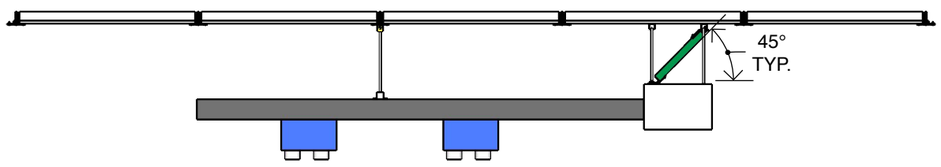
**Bracing is only required if abnormal & additional abuse loads will occur over the life of the ceiling. When necessary, the following guide illustrates the recommended busbar bracing to Polargy's PICS Ceiling Grid.**

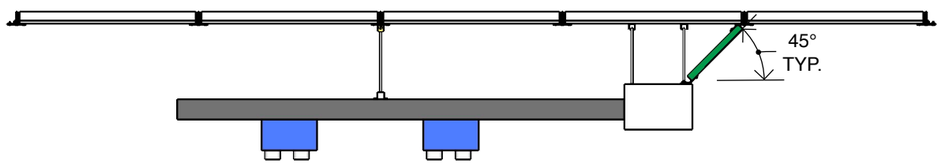



**SCENARIO 1: TO STRUT BRACING**



**SCENARIO 2: TO PICS BRACING**



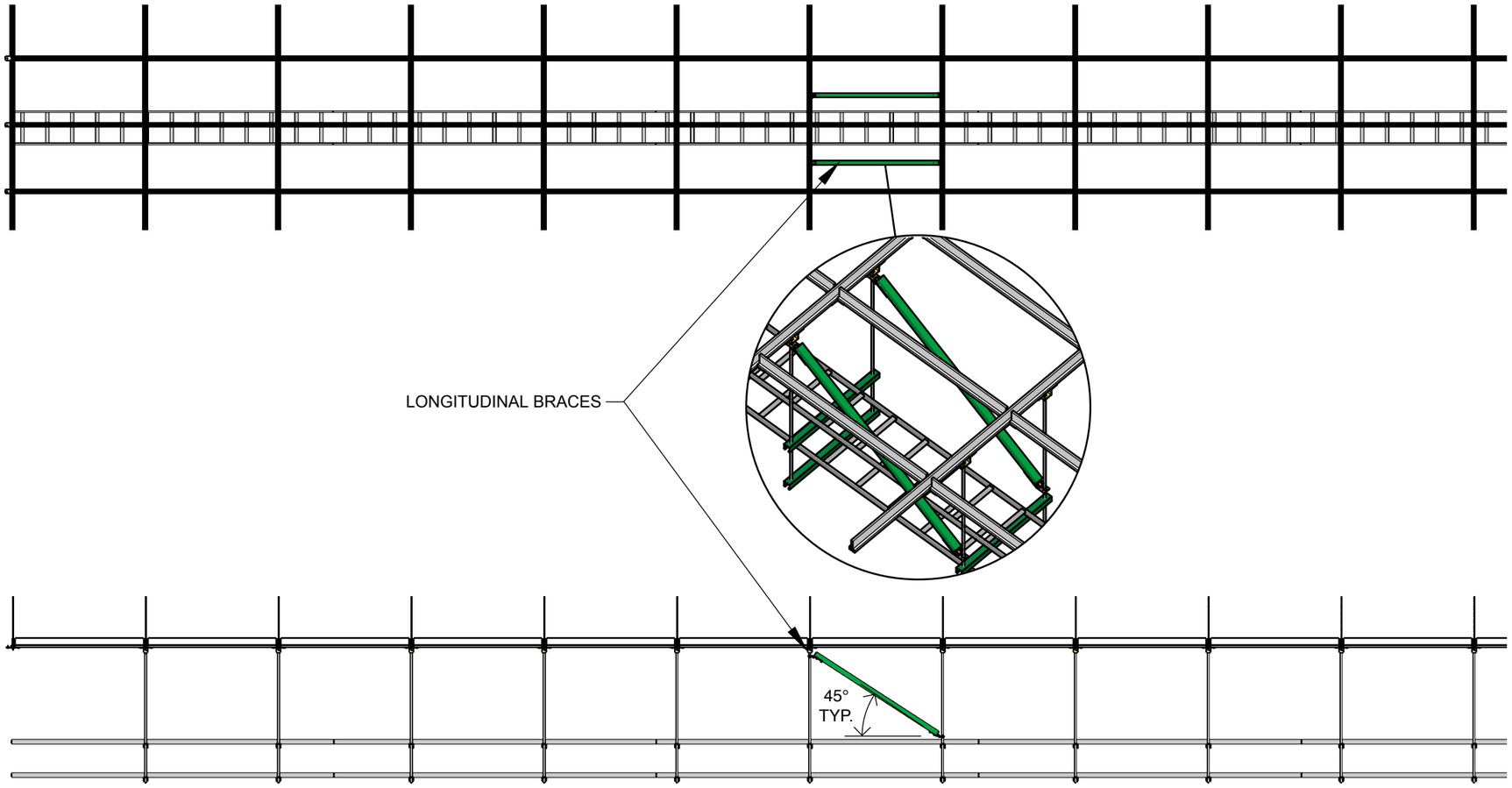

**LONGITUDINAL BRACING (Parallel to Busbar):** Install one longitudinal brace at the end feed box. The above images reference the two most common bracing scenarios with both being acceptable. If additional forces or stress points are known, it is recommended that additional bracing be provided at those locations.
Note: Braces can extend down in either direction as long as they are parallel to the busbar.

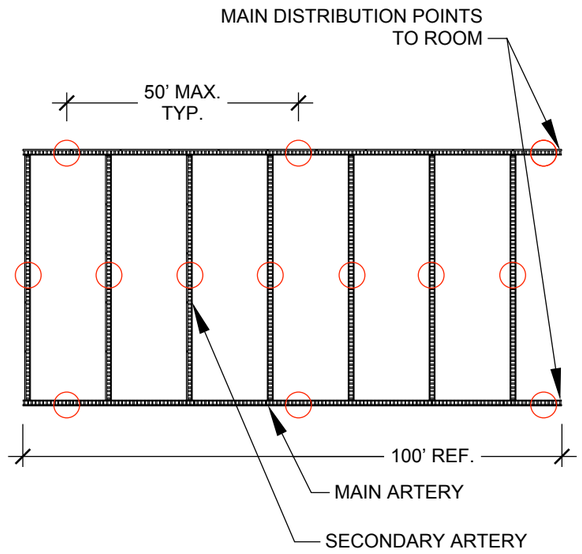
**TRANSVERSE BRACING (Perpendicular to Busbar):** Not required. If additional forces or stress points are known to be applied perpendicular to the busbar, it is recommended that additional transverse bracing be provided at those locations.
Note: Braces can extend down in either direction as long as they are perpendicular to the busbar.

NOTES:
1. Longitudinal and transverse braces must not be skewed more than 15° off of their respective centers and should maintain as close to a 45° bracing angle at all times.
2. Bracing connection points can be to strut, threaded rod, or directly to the grid. If joined to grid, maintain at least a 12" gap between all bolting locations.
3. Typical strut hardware is to be used for all bracing. When going directly to the grid with strut hardware, a 3/8"-16 bolt and 3/8" flat washer are needed to secure.
4. Bracing shown on this page represents recommended stability and/or abuse bracing only. Seismic bracing as required of busbar runs shall be designed by others.

## RACEWAY BRACING

**Bracing is only required if abnormal & additional abuse loads will occur over the life of the ceiling. When necessary, the following guide illustrates the recommended raceway bracing to Polargy's PICS Ceiling Grid.**




**ROOM LAYOUT VIEW**
(RED CIRCLES INDICATE BRACING LOCATIONS)

**MAIN ARTERY BRACING (Perpendicular to Server Rows):** Longitudinal bracing sets to be provided at the main distribution points of the room and every 50' O.C. thereafter. If additional cable pull forces or stress points are known, it is recommended that additional sets of bracing be provided at those locations.
Note: Braces can extend down in either direction as long as they are parallel to the raceway.

**SECONDARY ARTERY BRACING (Parallel to Server Rows):** Longitudinal bracing sets to be provided at the center of each secondary artery run. If additional cable pull forces or stress points are known, it is recommended that additional sets of bracing be provided at those locations.
Note: Braces can extend down in either direction as long as they are parallel to the raceway.

NOTES:
1. Room layout view indicates typical bracing locations for a room.
2. Longitudinal braces must not be skewed more than 15° off of their respective centers and should maintain as close to a 45° bracing angle at all times.
3. Bracing connection points can be to strut, threaded rod, or directly to the grid. If joined to grid, maintain at least a 12" gap between all bolting locations.
4. Typical strut hardware is to be used for all bracing. When going directly to the grid with strut hardware, a 3/8"-16 bolt and 3/8" flat washer are needed to secure.
5. Bracing shown on this page represents recommended stability and/or abuse bracing only. Seismic bracing as required of raceway runs shall be designed by others.



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