# INSTALLATION INSTRUCTIONS

## SLIMLINE HIP

Brasco INTERNATIONAL

AMERICAN MADE. AMERICAN TRUSTED. SINCE 1993.

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SLIMLINE SERIES INSTALLATION INSTRUCTIONS


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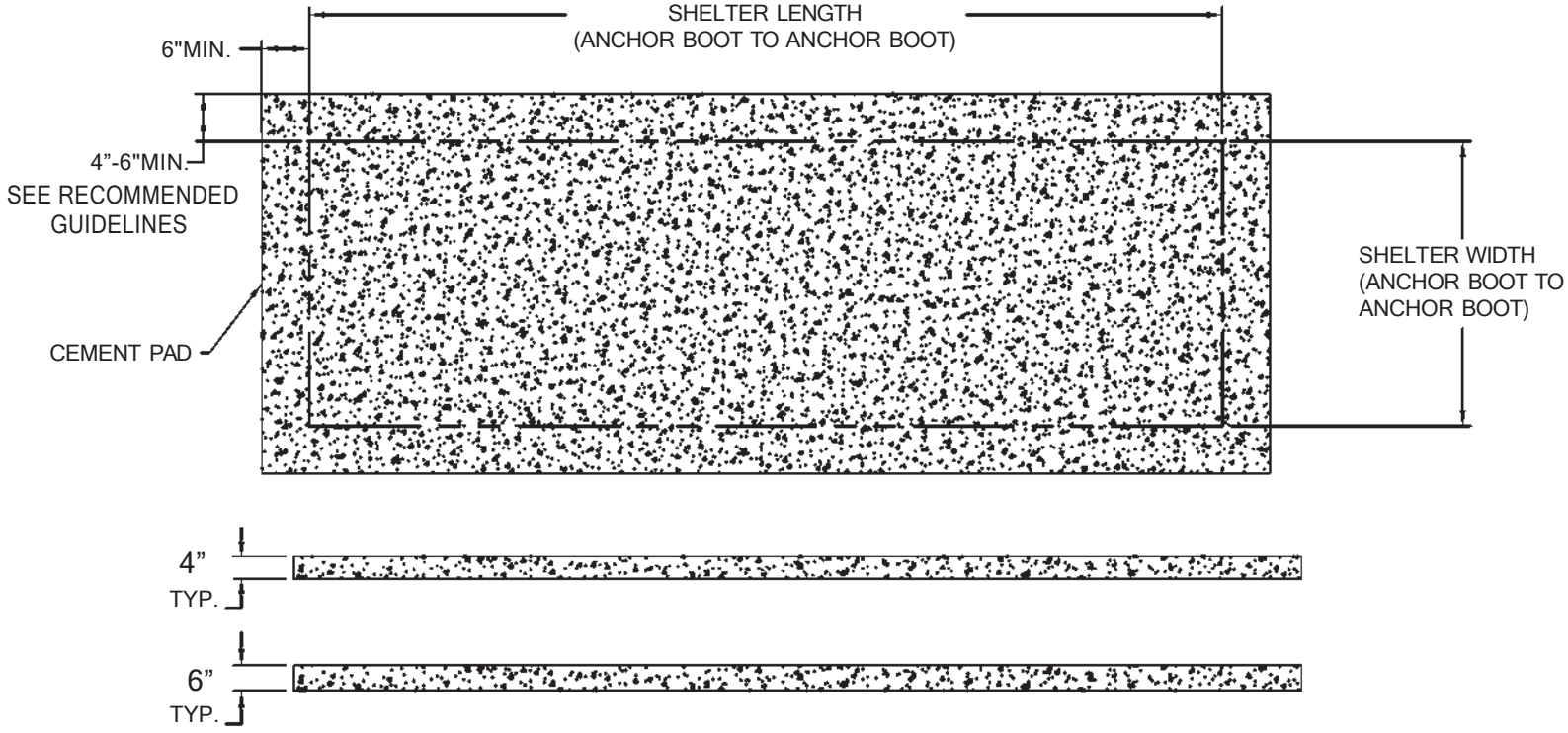
## Standard Concrete Pad Recommendation

**Note:** This visual is for reference only. Brasco is not liable for concrete installation instructions unless structural concrete calculations are included with an order. Consult your local building codes for specific concrete pad requirements.

**Recommended:** Brasco recommends a minimum 4 inch thick, 3000 PSI concrete pad for locations with wind speeds lower than 110 MPH. For locations with wind speeds higher than 110 MPH, Brasco recommends a minimum 6 inch thick, 3000 PSI concrete pad. The concrete pad should allow a minimum of 6 inches around the shelter's perimeter to prevent damage to the pad while anchoring. Concrete may or may not require additional reinforcement.



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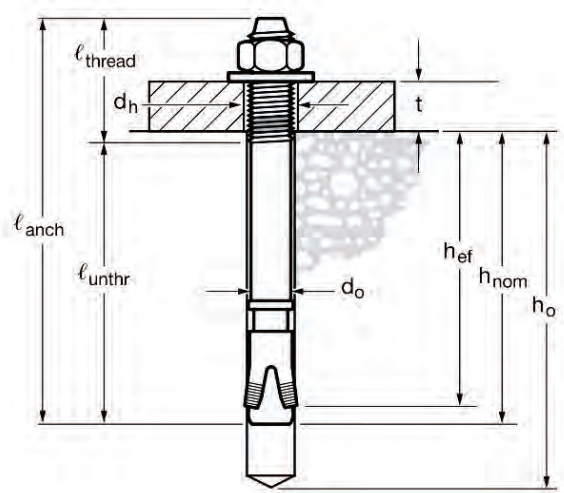
## Standard Expansion Anchor Guidelines

### Expansion Anchor Installed:



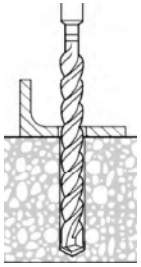

### Expansion Anchor Technical Reference Chart:

| Setting information | Symbol | Units | Nominal anchor diameter $d_a$ | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3/8 | | | 1/2 | | | | 5/8 | | | | 3/4 | | |
| Nominal bit diameter | $d_{bit}$ | in. | 3/8 | | | 1/2 | | | | 5/8 | | | | 3/4 | | |
| Minimum nominal embedment | $h_{nom}$ | in. | 2-5/16 | | | 2-3/8 | | 3-5/8 | | 3-9/16 | | 4-7/16 | | 4-5/16 | | 5-9/16 |
| | | (mm) | (59) | | | (60) | | (91) | | (91) | | (113) | | (110) | | (142) |
| Effective minimum embedment | $h_{ef}$ | in. | 2 | | | 2 | | 3-1/4 | | 3-1/8 | | 4 | | 3-3/4 | | 4-3/4 |
| | | (mm) | (51) | | | (51) | | (83) | | (79) | | (102) | | (95) | | (121) |
| Min. hole depth | $h_o$ | in. | 2-5/8 | | | 2-5/8 | | 4 | | 3-3/4 | | 4-3/4 | | 4-5/8 | | 5-3/4 |
| | | (mm) | (67) | | | (67) | | (102) | | (95) | | (121) | | (117) | | (146) |
| Min. thickness of fixture[1] | $t_{min}$ | in. | 1/8 | | | 1/8 | | n/a | | 1/8 | | n/a | | 1/8 | | n/a |
| | | (mm) | (3) | | | (3) | | | | (3) | | | | (3) | | |
| Max. thickness of fixture | $t_{max}$ | in. | 2-1/4 | | | 4 | | 2-3/4 | | 5-5/8 | | 4-3/4 | | 4-5/8 | | 3-5/8 |
| | | (mm) | (57) | | | (101) | | (70) | | (143) | | (121) | | (117) | | (92) |
| Installation torque | $T_{inst}$ | ft-lb | 25 | | | 40 | | | | 60 | | | | 110 | | |
| | | (Nm) | (34) | | | (54) | | | | (81) | | | | (149) | | |
| Fixture hole diameter | $d_h$ | in. | 7/16 | | | 9/16 | | | | 11/16 | | | | 13/16 | | |
| | | (mm) | (11.1) | | | (14.3) | | | | (17.5) | | | | (20.6) | | |
| Available anchor lengths | $\ell_{anch}$ | in. | 3 | 3-3/4 | 5 | 3-3/4 | 4-1/2 | 5-1/2 | 7 | 4-3/4 | 6 | 8-1/2 | 10 | 5-1/2 | 8 | 10 |
| | | (mm) | (76) | (95) | (127) | (95) | (114) | (140) | (178) | (121) | (152) | (216) | (254) | (140) | (203) | (254) |
| Threaded length including dog point | $\ell_{thread}$ | in. | 7/8 | 1-5/8 | 2-7/8 | 1-5/8 | 2-3/8 | 3-3/8 | 4-7/8 | 1-1/2 | 2-3/4 | 5-1/4 | 6-3/4 | 1-1/2 | 4 | 6 |
| | | (mm) | (22) | (41) | (73) | (41) | (60) | (86) | (178) | (38) | (70) | (133) | (171) | (38) | (102) | (152) |
| Unthreaded length | $\ell_{unthr}$ | in. | 2-1/8 | | | 2-1/8 | | | | 3-1/4 | | | | 4 | | |
| | | (mm) | (54) | | | (54) | | | | (83) | | | | (102) | | |

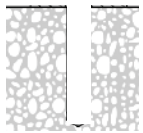
Minimum thickness of fixture is a concern only when the anchor is installed at the minimum nominal embedment. When KWIK Bolt TZ anchors are installed at this embedment, the anchor threading ends near the surface of the concrete. If the fixture is sufficiently thin, it could be possible to run the nut to the bottom of the threading during application of installation torque. If fixtures are thin, it is recommended that embedment be increased accordingly.

### Anchoring Expansion Anchors into Concrete

#### Step 1: Prepping the Concrete

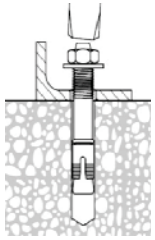


Using the anchor boot as a template, mark hole locations and move anchor boot out of the way. Drill a hole the same diameter as the expansion anchor to a minimum depth of 1/2" deeper than the anchor will penetrate to allow debris to fall during installation.



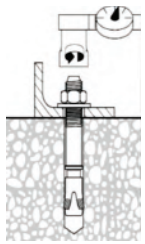
#### Step 2: Prepping the Hole

Clean debris from holes using a wire brush, vacuum, or compressed air.



#### Step 3: Anchor Installation

Align anchor boot with prepped holes in the concrete. Make sure the nut on the expansion anchor is threaded to the top of the threaded rod to prevent damage to the threads. Insert expansion anchor through the base plate and into the hole in the concrete. Hit the expansion anchor with sharp blows until the washers are snug against the base plates.



#### Step 4: Secure the Anchor Boot

Tighten the nut to the recommended installation torque. Reference "Expansion Anchor Technical Reference Chart," the above.



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## Before You Begin

Please read through the installation instructions in full before proceeding with the installation. Depending on the quantity of shelters and amenities ordered, the shipment will be crated by like items (walls together, roofs together, hardware boxes together) unless otherwise stated on your order.

## Part and Hardware Verification

Prompt inspection of the crate(s) is required when receiving shipment. Crated contents must be checked for freight damage and/or missing items. Each shipment will include a crate index which lists crate sizes and materials packaged in each crate. Any visible damage that occurred in transit must be noted on the Bill of Lading (BOL) and acknowledged by the carrier, prior to the truck leaving the site.

Each order comes with a hardware box containing all fasteners and anchor bolts necessary for installation. Verify all hardware is accounted for against the packing list provided at receipt of shipment.

If you have any questions or concerns about your order please contact Brasco International at (313) 393-0393.

## Suggested Tools

- Drill Motor
- ¼" Drill Bit
- #11 Drill Bit
- 8" x ½" Masonry Drill Bits
- 5/8" and ¾" Socket and Wrench
- HD Drill Motor or Hammer Drill
- Cordless Drill
- Air Compressor
- Steel Hammer
- Dead Blow Hammer or Mallet
- Bubble Level, Line/String Level
- Minimum 6 Foot Step Ladder
- Rivet Gun
- Tape Measure
- Torque Wrench
- 60" Bar Clamps
- Generator or Other Power Source
- Shop Vac or Broom For Clean Up

## Hardware Reference Key

**F1044 -** #14 x 1" S.S. Hex Head Tek Screw
*For mounting columns to anchor boots and Flat Pan roof attachment*

**F1045 -** 3/16" x 1/4" Aluminum Pop Rivet
*For mounting all wall segments together*

**F1047 -** 1/4" x 1/4" Aluminum Dome Head Drive Rivet
*For attaching roof assembly to the shelter frame*

**MS005-** Rivet Setting Tool
*For tapping rivets into place*

**F1048 -** 1/4" x 3/8" Aluminum Flat Head Drive Rivet
*For mounting sash frame to shelter frame columns*

**F1022 -** 1/2" Wedge Anchor
**F1062** - 1/2-13 S.S. Hex Nut
**F1054** - 1/2" S.S. Flat Washer and
**F1058** - 1/2" S.S. Lock Washer
*Anchor bolt assembly for mounting shelter to concrete pad*



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SHELTER DRAWING - PLACEHOLDER PAGE



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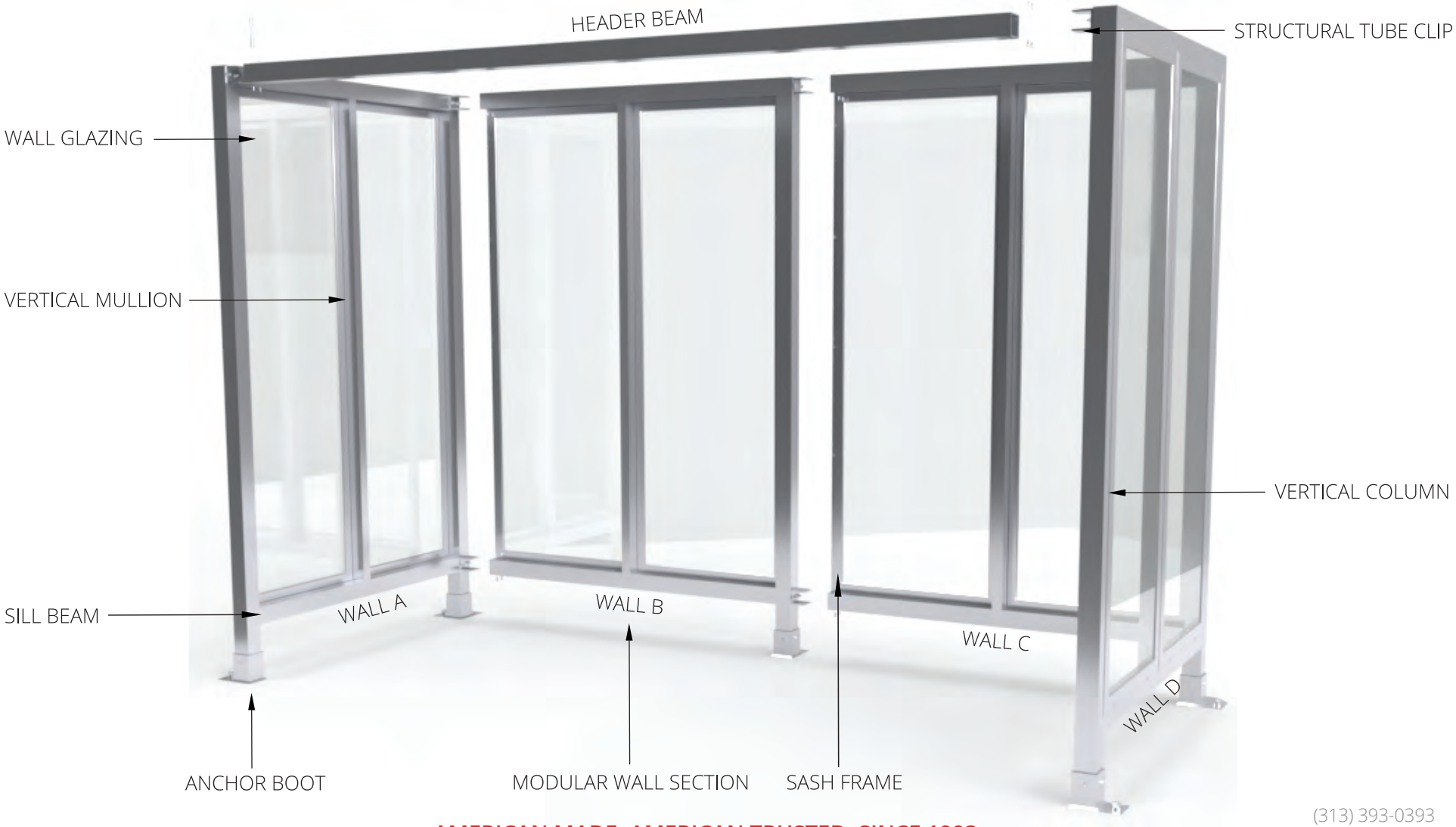
## Shelter Assembly Overview

Slimline Series Shelters consist of pre-glazed modular sections which mechanically attach together with the hardware supplied by Brasco in the shipments hardware box(s). Below is a standard shelter layout with three sides and an open front. Each order is unique and may have a different layout than seen below. Note common Slimline shelter components shown below. Reference page 4 for your orders specific shelter drawing(s).



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## Anchor Boot Placement

Begin by setting each vertical column into an anchor boot.

Place single flange anchor boots (shown in Figure 1) on front and rear center columns.

Place corner double flange anchor boots (shown in Figure 2) on the left and right rear corner columns.

Note: Position the anchor boot flange away from shelter.

**FIGURE 1: SINGLE FLANGE ANCHOR BOOT**

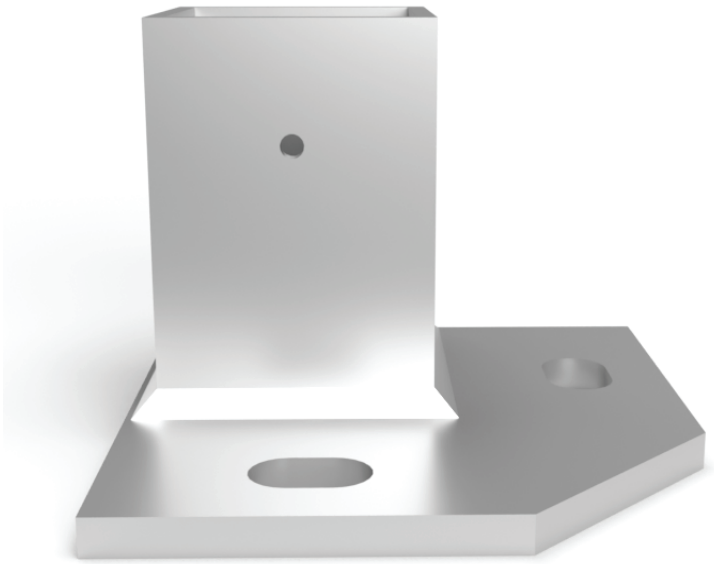

**FIGURE 2: DOUBLE FLANGE ANCHOR BOOT**



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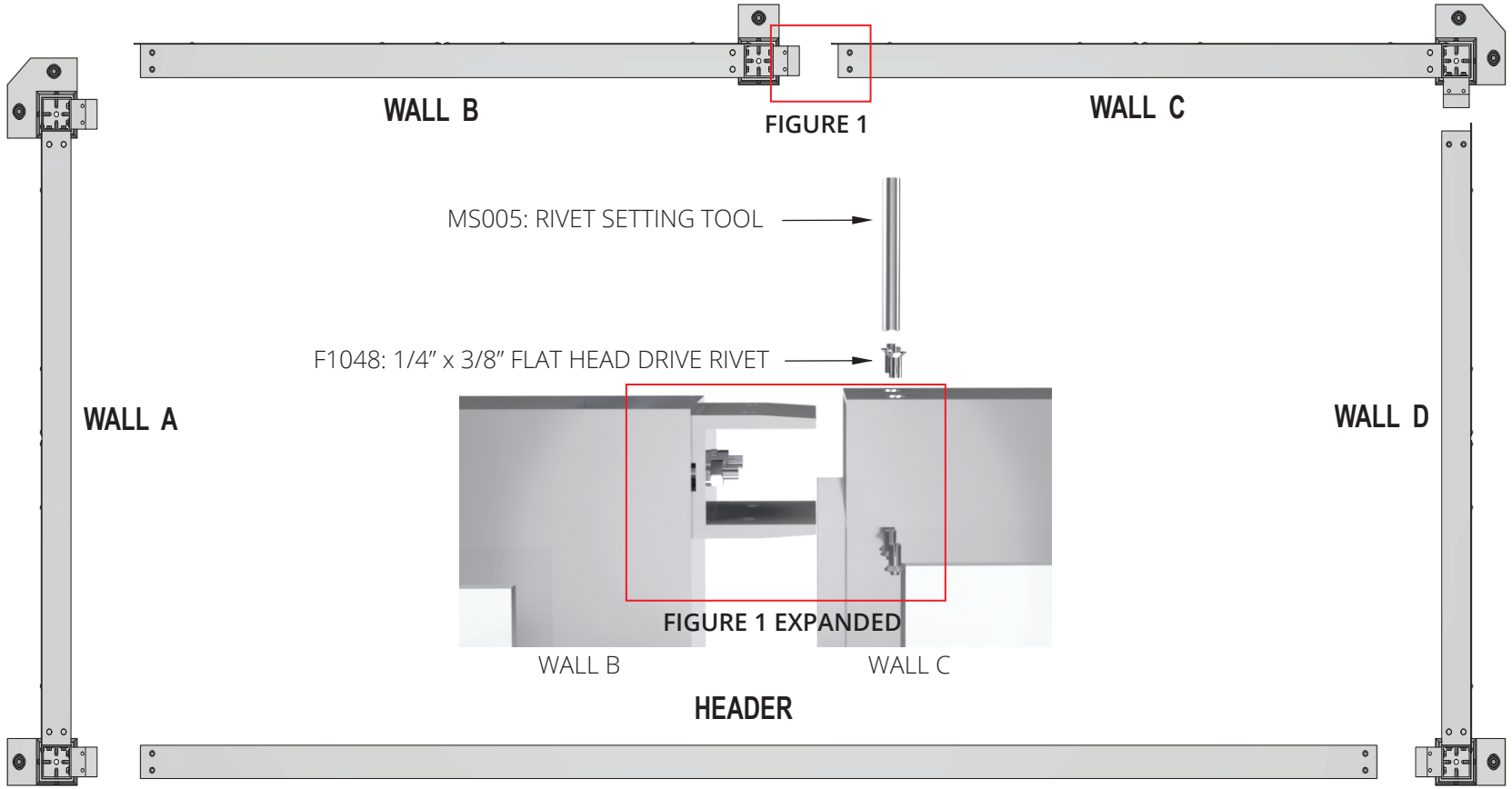
## Wall Connections

Starting with the left side wall “A” and left rear wall “B”, insert the horizontal header and sill tubes into the corresponding 2-1/2” structural tube clips until the wall sections are fully engaged. Fully engaged wall sections will have sash framing covering the edge of the column which will be secured using method illustrated on “Wall Glazing Connections” page.

Using the Drive Rivet Setting Tool (MS005), place 1/4“ x 3/8” Flat Head Drive Rivet (F1048) into pre-drilled holes located on the structural tube clips.

Once the 1/4” x 3/8” Flat Head Drive Rivet is engaged, remove the Drive Rivet Setting Tool and strike the Drive Rivet with a sharp hammer strike until the pin is flush with the head of the fastener.

Repeat this process to connect the remaining wall sections, front header beam, and any cross brace connections.



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## Wall Glazing Attachment

After securing the structural tube clips to the corresponding header and sill beams, use the prepped holes in the pre-glazed wall sash framing as a template to drill through the wall of the columns using a #11 (0.191") drill bit for each of the five (5) pop rivet locations.

Insert a 3/16" x 1/4" Aluminum Pop Rivet (F1045) into each hole and secure using a hand tool or pneumatic rivet gun.

FIGURE 2

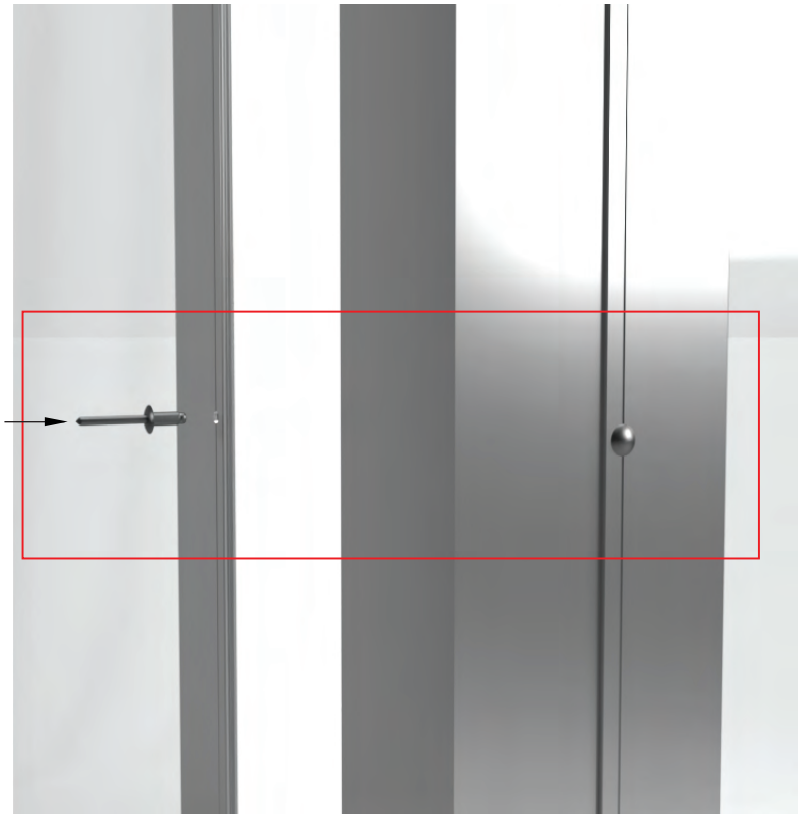


FIGURE 2 EXPANDED



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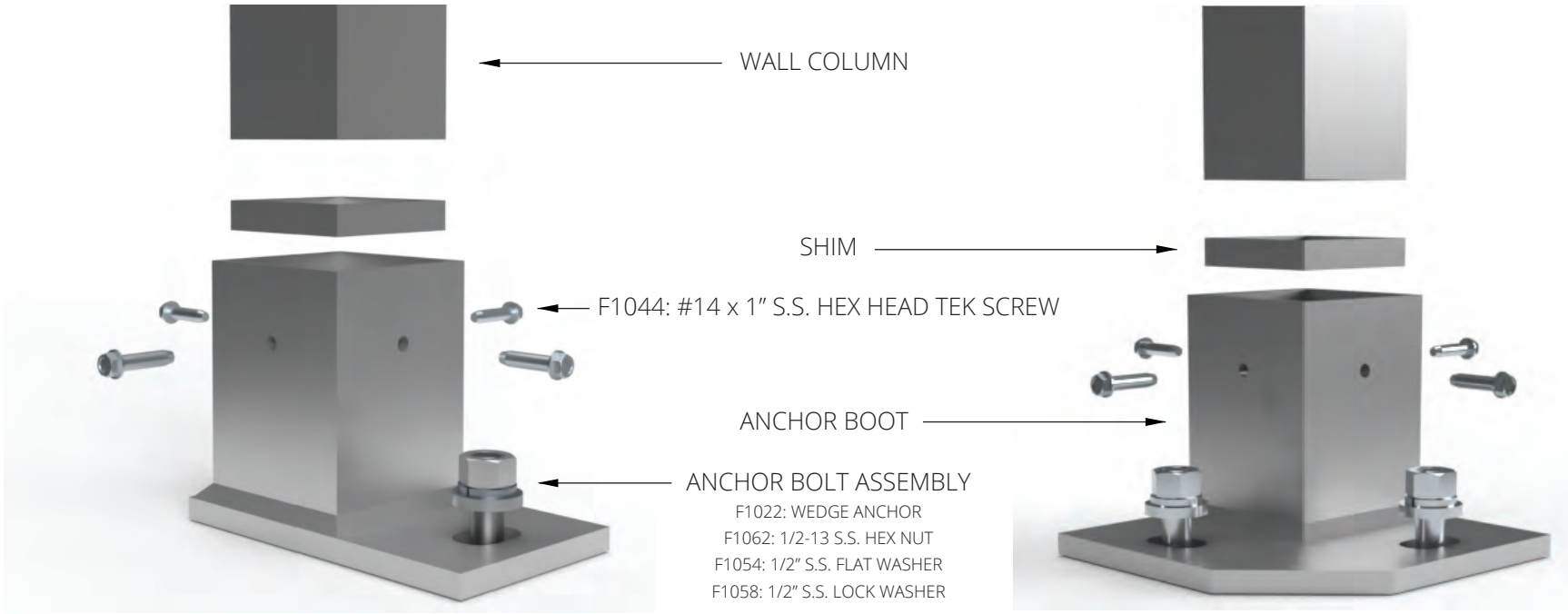
## Anchoring and Shimming

Make sure all wall sections are plumb and square prior to securing anchor bolts to the concrete pad. Using the shims provided, insert shim into anchor boot to pitch shelter 1/4" to the rear to allow for proper drainage of the integral gutter fascia system.

Once proper pitch is achieved, transfer and drill 1/4" holes through the prepped anchor boot into the vertical columns. Secure anchor boots to columns using four (4) #14 x 1" S.S. Hex Head Tek Scews (F1044).

Follow our anchor bolt attachment guide on page 2 to anchor shelter to concrete pad.




**SINGLE FLANGE ANCHORING DETAIL**

**DOUBLE FLANGE ANCHORING DETAIL**



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## Hip Roof Installation

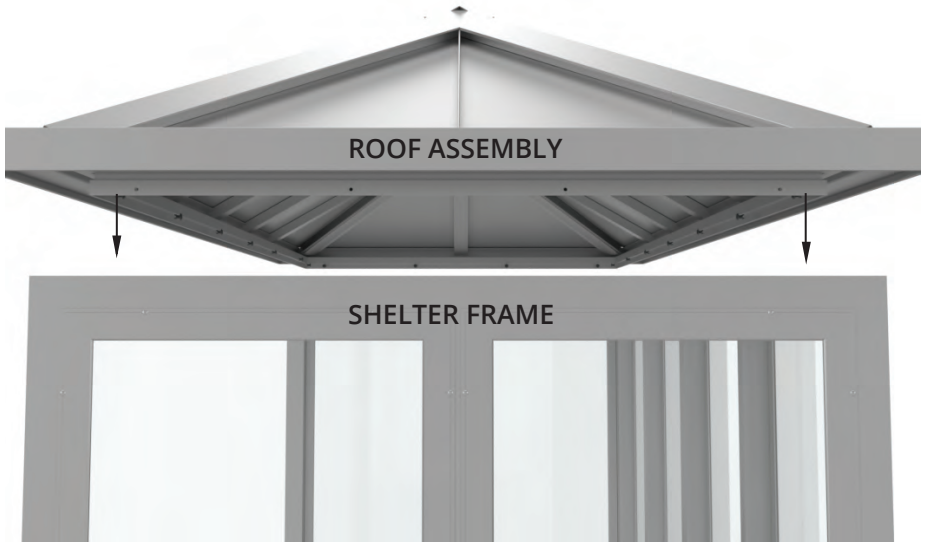
Make sure top of header beams are clean and clear of debris.

With drain holes towards rear of shelter, carefully set pre-assembled roof onto secured shelter frame.

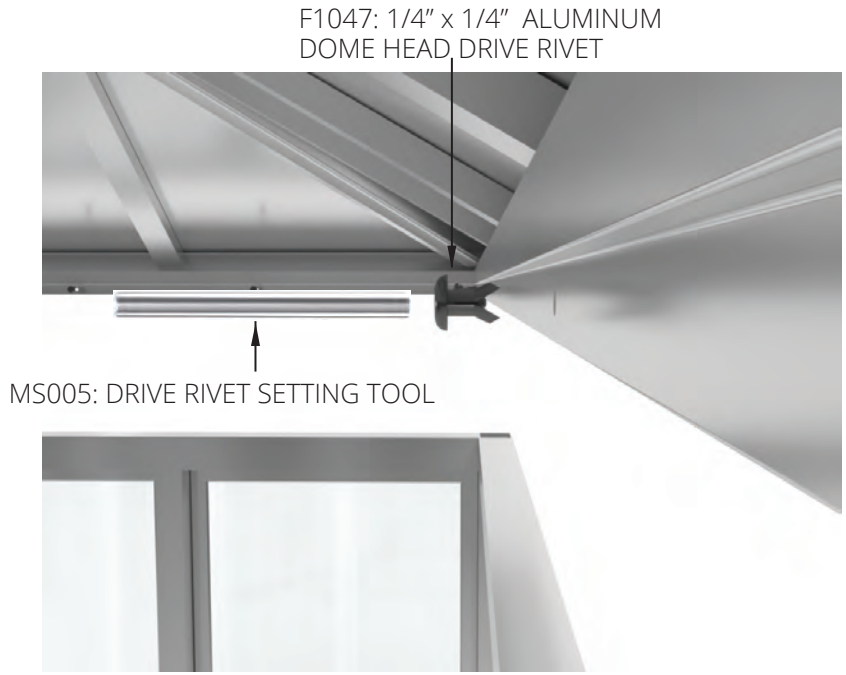
Using the prepped holes in the fascia as a template, transfer holes to the perimeter of the header tubes using 1/4” drill bit.

Insert 1/4” x 1/4” Dome Head Rivet (F1047) into the Drive Rivet Setting Tool (MS005) and tap into each hole using a hammer.

Remove Drive Rivet Setting Tool and use sharp blows to secure the Dome Head Rivets until the pin is flush with the head of the fastener.




**SIDE ELEVATION**
Carefully set roof assembly onto shelter frame with the integral gutter weep holes towards the rear of the shelter.




**INTERNAL ELEVATION**
Using the prepped holes in the fascia, transfer holes throughout the header beam. Secure with F1047 using MS005 setting tool.