

2 - Leg Towers

20' to 55' Tall
F/C Series

Chain Loop and
Catwalk Designs
Installation Manual

PNEG-1412

Revision Date: 9-26-05



PNEG-1412



TABLE OF CONTENTS

Overview	4
Tools	4
Safety	5
Anchor Bolt Layout for Chain Loop Support	6
Anchor Bolt Layout for Catwalk Support	7
Lateral Bracket to Bin for Chain Loop Support	8-9
Lateral Bracket to Bin for Catwalk Support	10-11
Column Section with Bottom Angle Joint - Plan View	13
Pre-Measuring for Alignment	14-15
Lateral Bracket, Bin Bracket, & Backing Plate - Plan Views	16
Diagonal "X" Bracing Configurations	17
Column Joints without Diagonal "X" Bracing	18
Column Joints with Diagonal "X" Bracing	19-20
Diagonal "X" Bracing - Plan View	21
Straighten Columns & Stand Towers in Place	22
Catwalk Support Brackets - Plan View	23
Warranty	Inside Back Cover

OVERVIEW

This assembly manual is for 2-Leg Towers for Chain Loop & catwalk support . Be sure and review all pages before planning foundation work. Depending on application, your foundation could vary. Choose the anchor bolt layout that fits your design and follow those dimensions for proper layout. Once all concrete work is done and bins have been erected locate parts and hardware for towers. Check packing list and count all parts. Report any missing components. Layout and sort parts for easy identification. Depending on your work environment, these instructions may need to be altered to fit your needs.

The tower can be assembled flat laying on a level surface and stood upright after all hardware has been tightened. Make sure tower legs are aligned and straight!

TOOLS

Drift Punches for 3/8" to 1/2" Bolts

3/4" Wrenches & Sockets

Ratchet & Impact Gun

9/16" Wrenches and Sockets

String

SAFETY

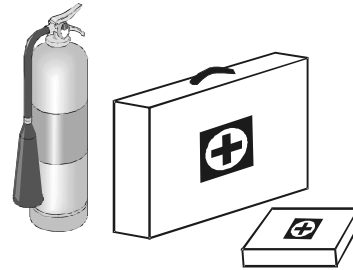
This equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

PREPARE FOR EMERGENCIES

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



Keep Emergency Equipment Quickly Accessible.

WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Safety glasses should be worn at all times to protect eyes from debris.

Wear gloves to protect your hands from sharp edges on plastic or steel parts.

A respirator may be needed to prevent breathing potentially toxic fumes and dust.

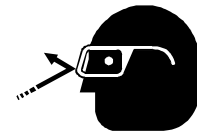
Wear hard hat and steel toe boots to help protect your head and toes from falling debris.

Remove all jewelry.

Tuck in any loose or dangling shoe strings.

Long hair should be tied up and back.

Eye Protection



Gloves



Steel Toe Boots



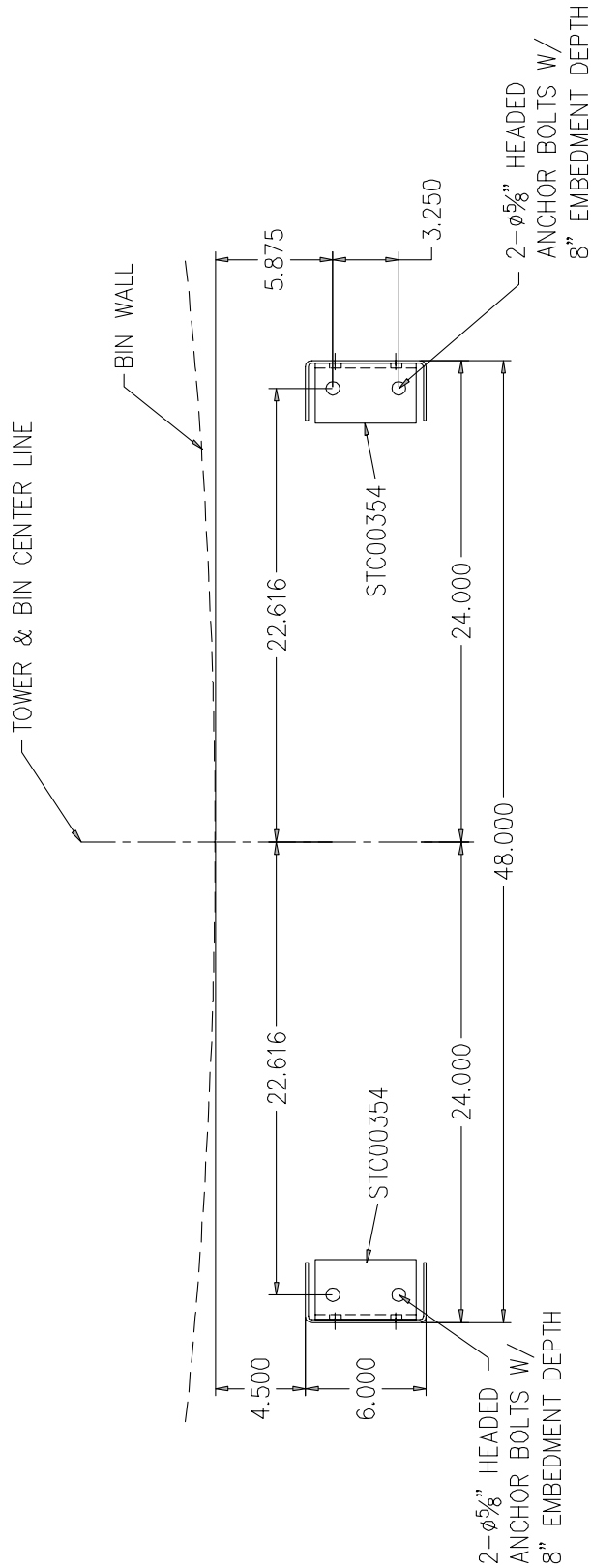
Respirator



Hard Hat



Anchor Bolt Layout for Chain-Loop Support

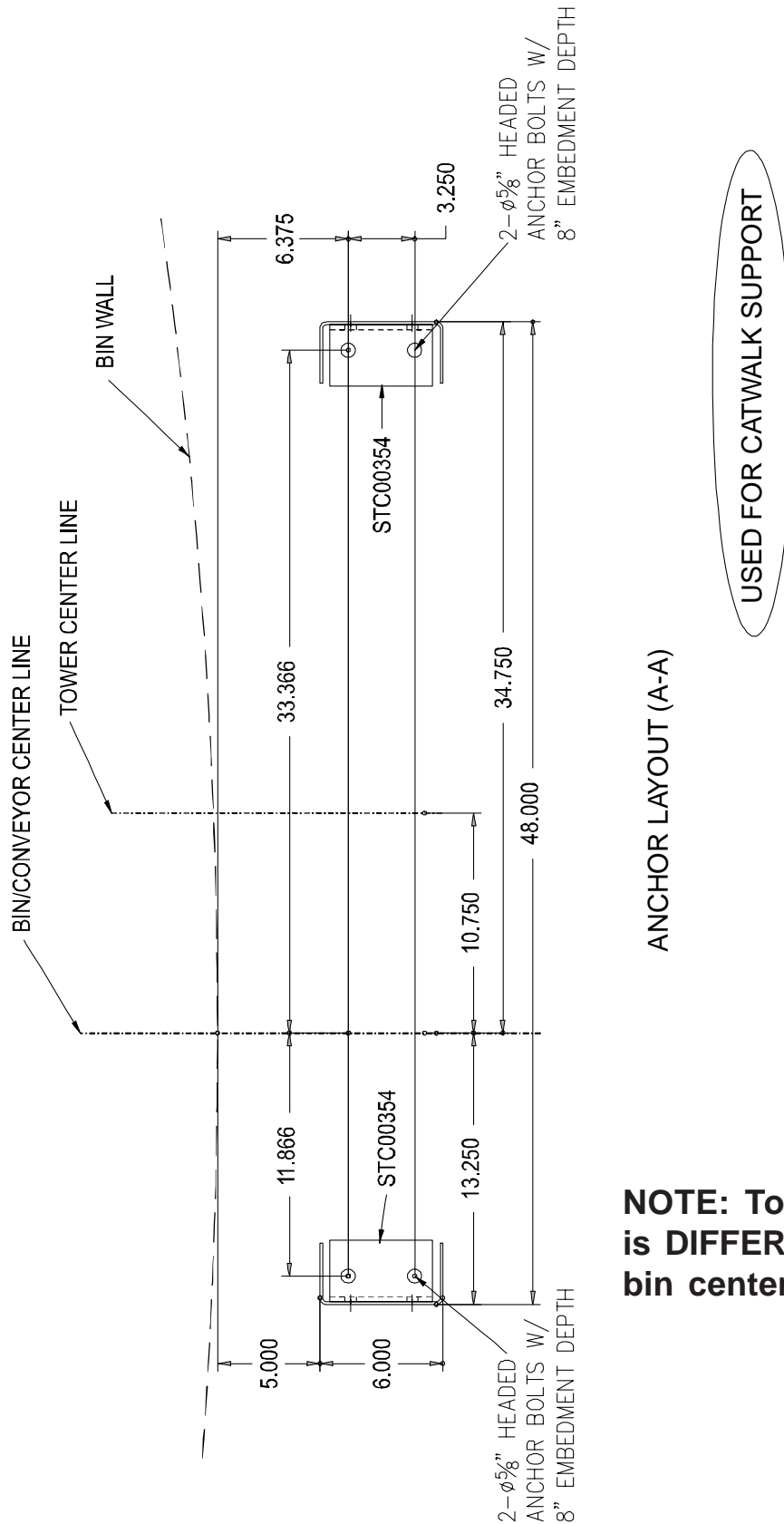


ANCHOR LAYOUT (A-A)

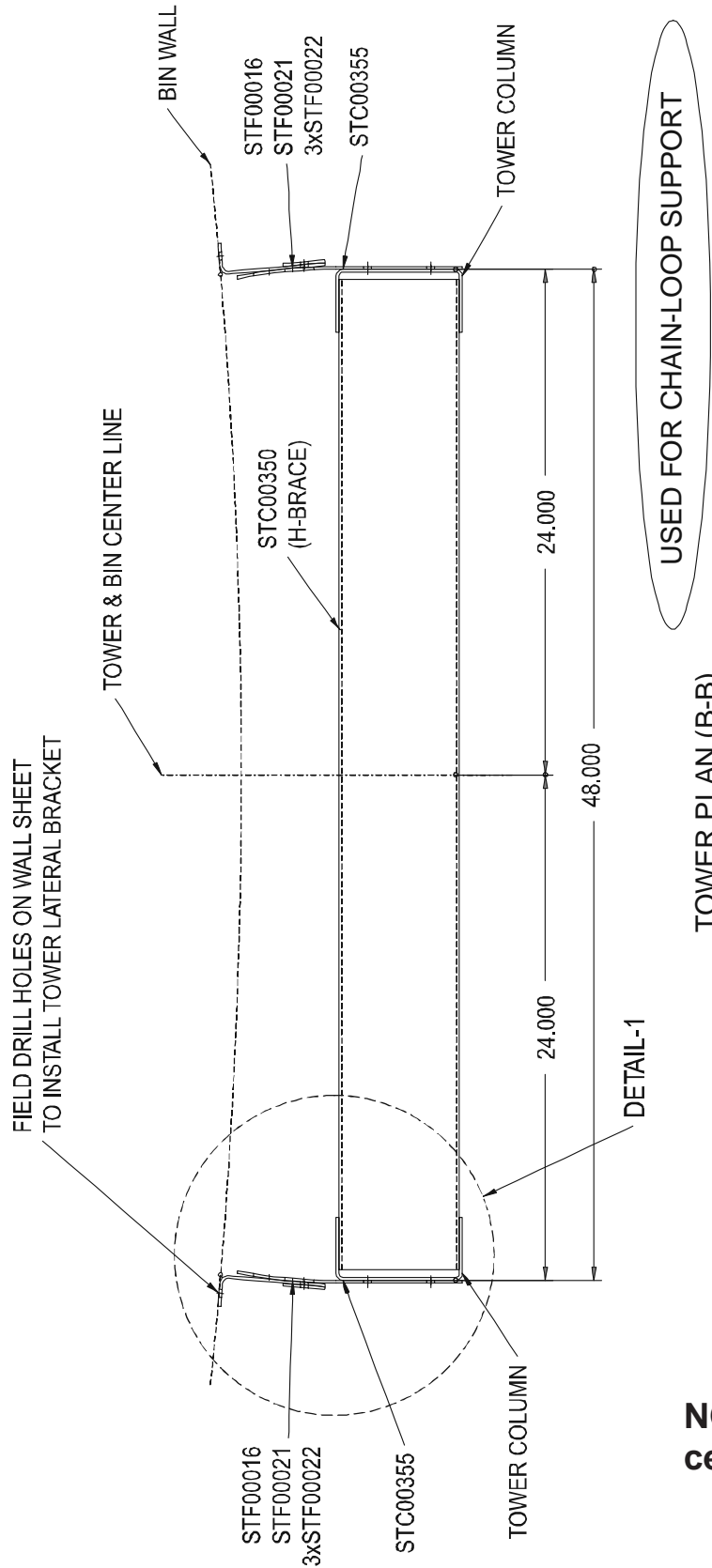
NOTE: Tower & bin center are the same.

USED FOR CHAIN-LOOP SUPPORT

Anchor Bolt Layout for Catwalk Support

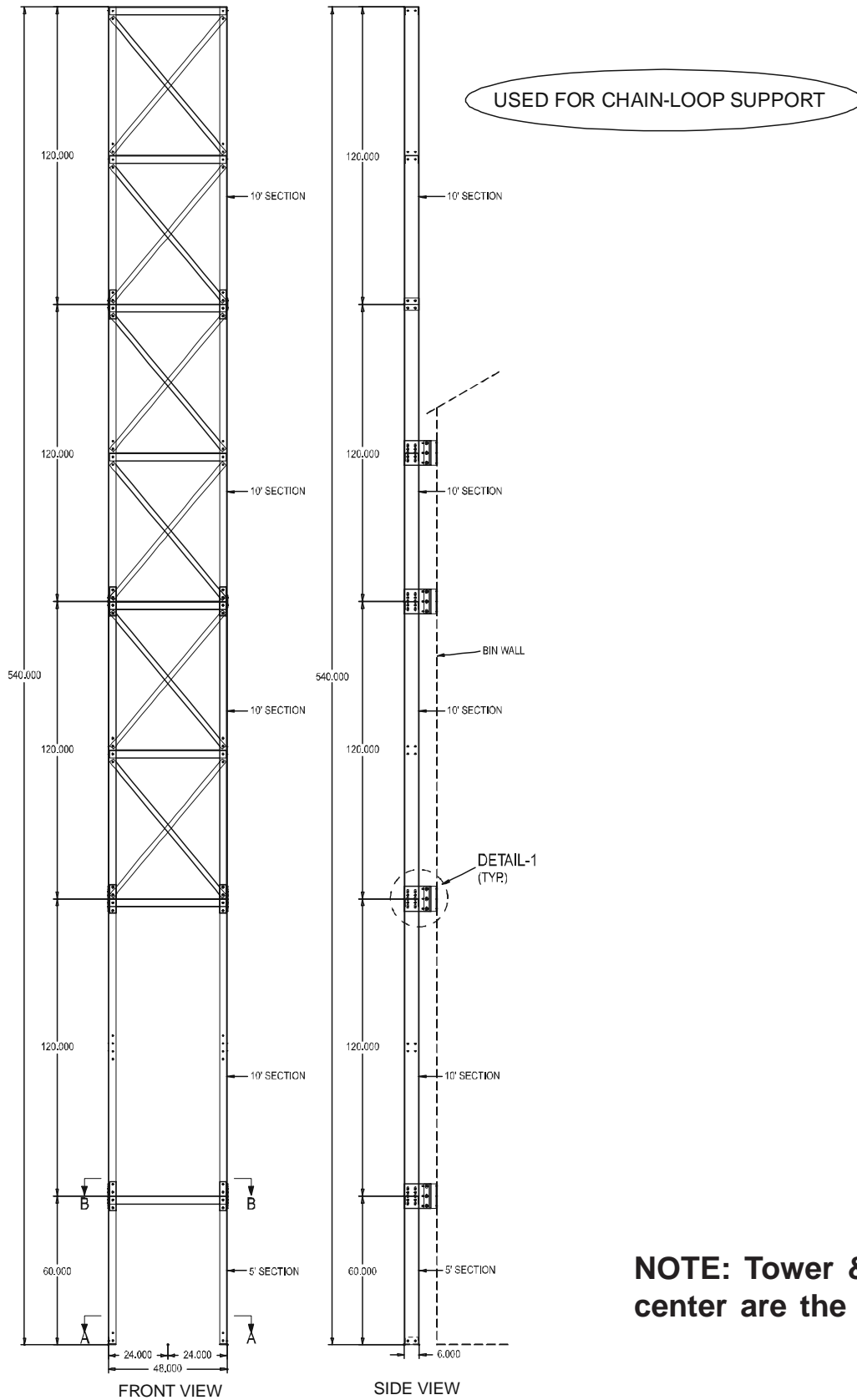


Lateral Bracket to Bin for Chain Loop Support



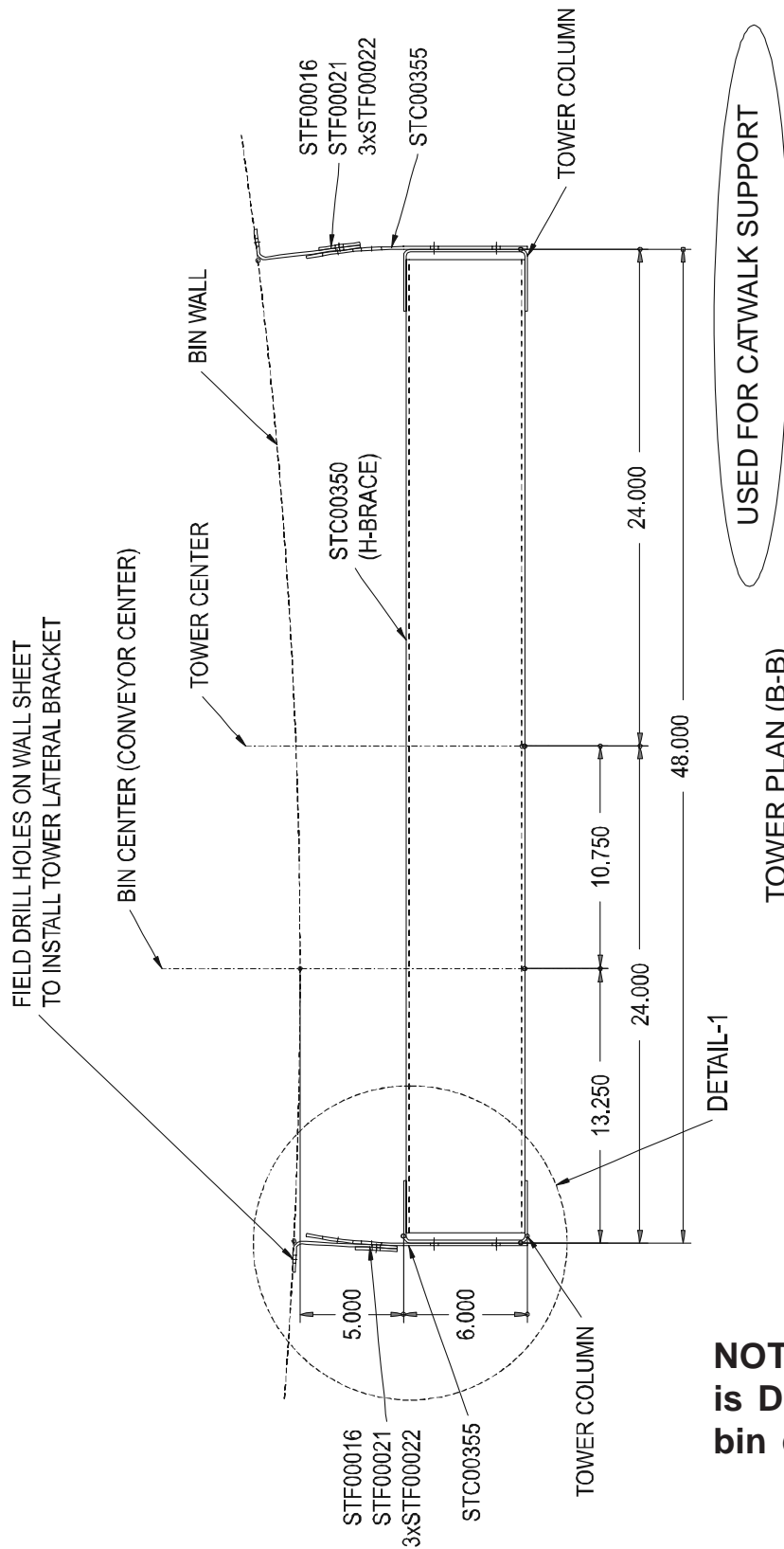
NOTE: Tower & bin center are the same.

Lateral Bracket to Bin for Chain-Loop Support

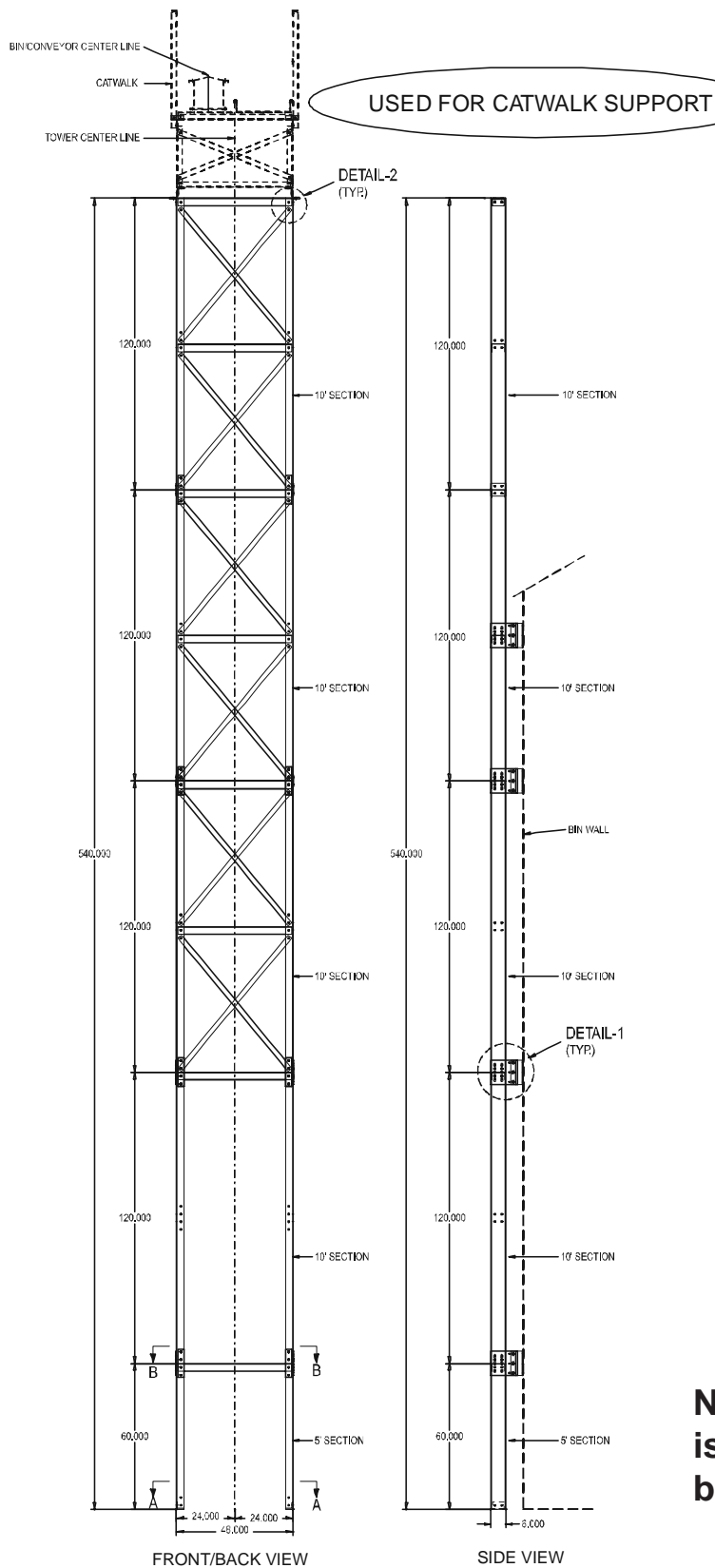


NOTE: Tower & bin center are the same.

Lateral Bracket to Bin for Catwalk Support



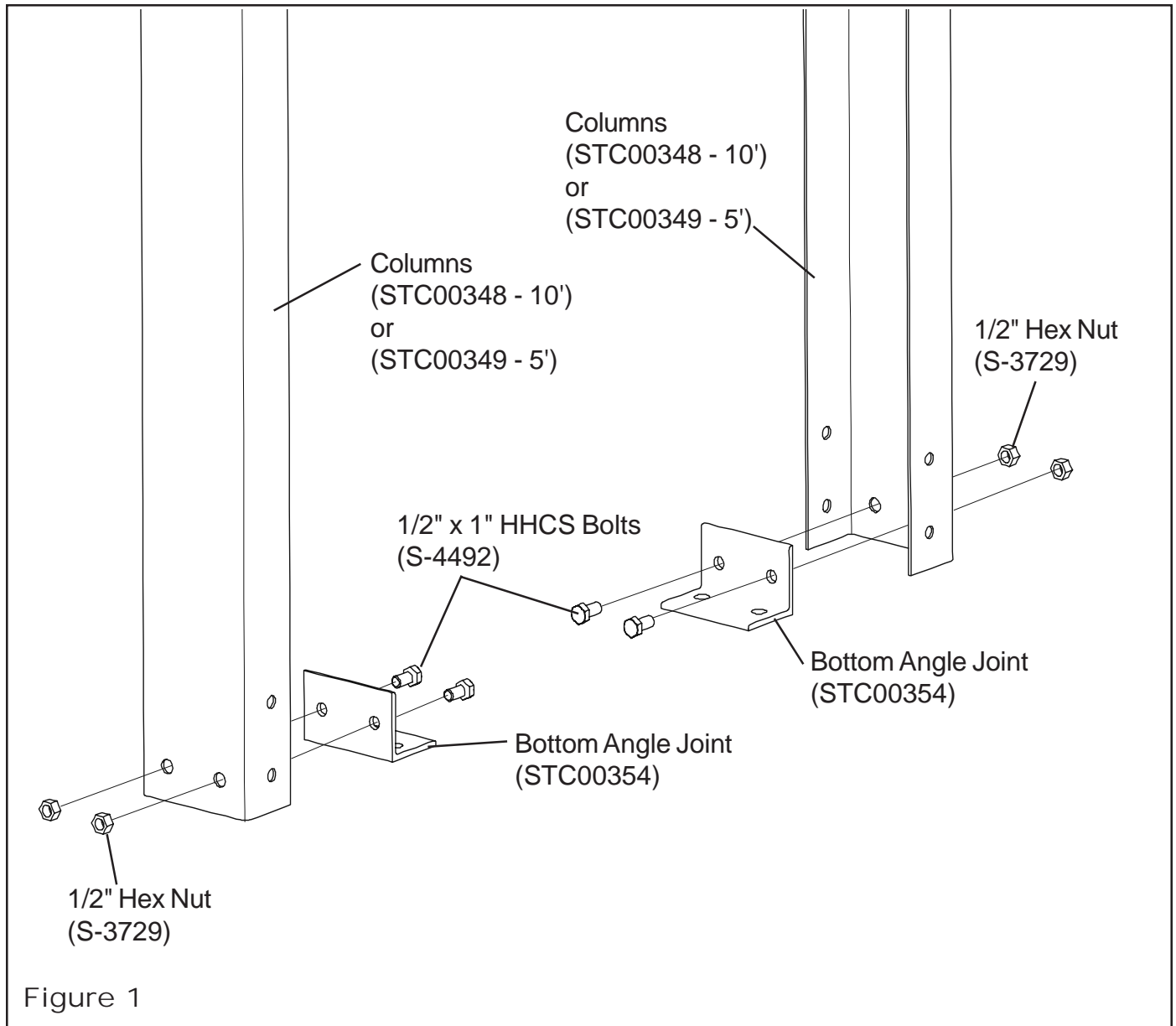
Lateral Bracket to Bin for Catwalk Support



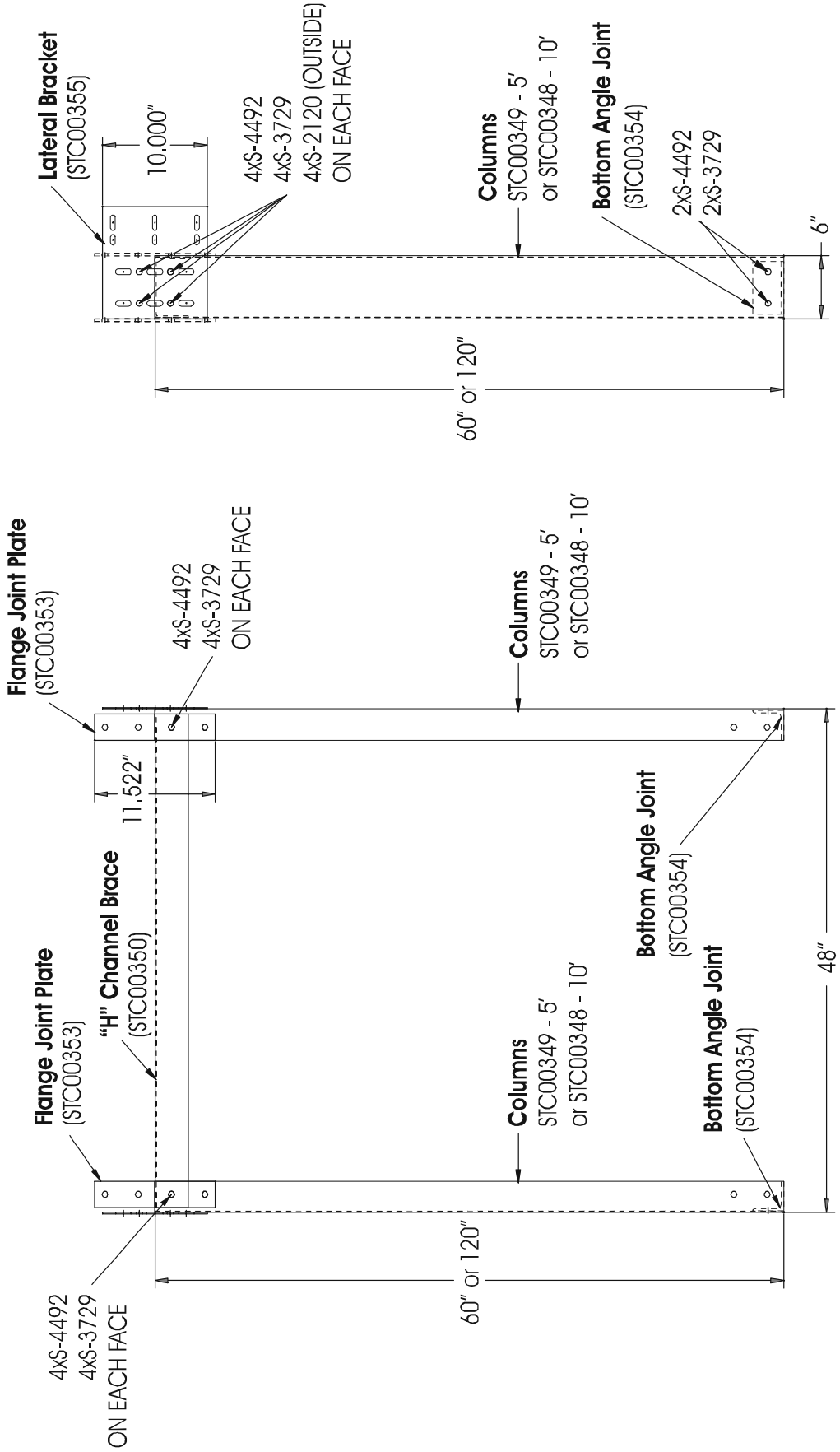
NOTE: Tower Center is DIFFERENT from bin center.

Assemble Bottom Angle Joints to Columns

1. Start assembly by taking the 2 bottom columns (**STC00348** -5' or **STC00349** -10' depending on height of tower) and attaching Bottom Angle Joint (**STC00354**) using (4) 1/2" x 1 HHCS bolts and (4) 1/2" hex nuts. (See Figure 1.) **Note: Angles go to inside of leg channel.**



Bottom Column Sections with Bottom Angle Joints



FRONT/BACK VIEW

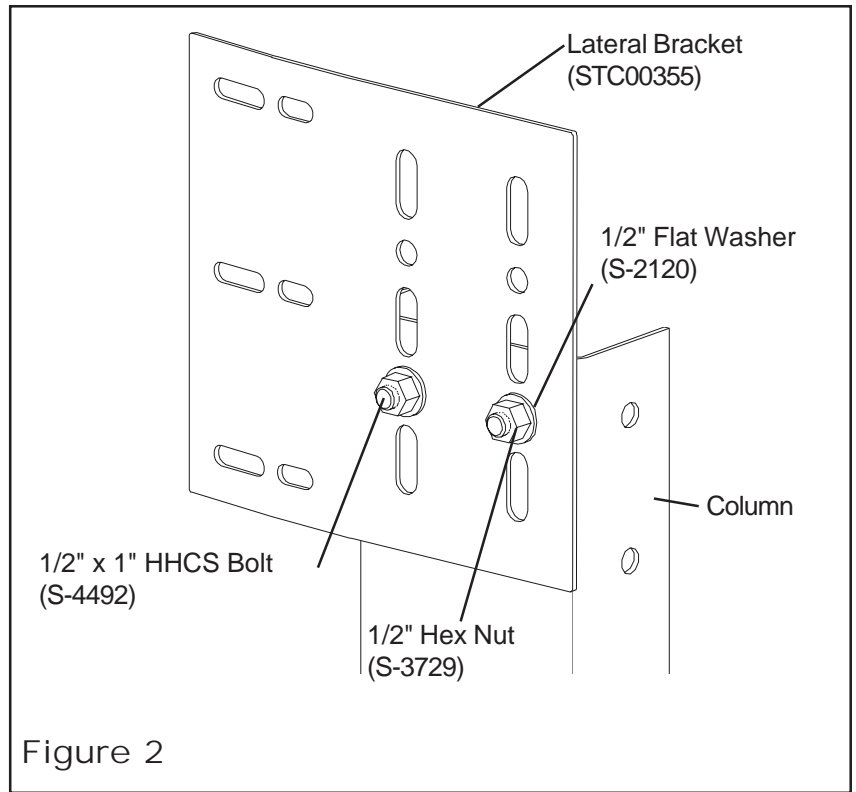
SIDE VIEW

Pre-Measuring for Alignment

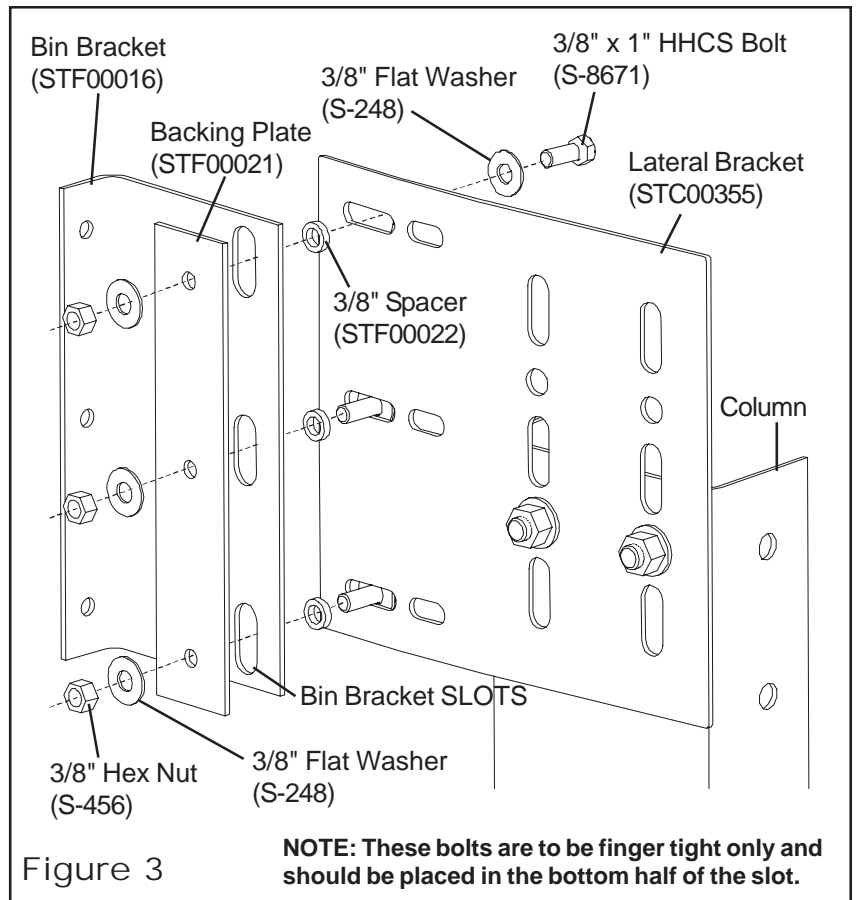
This step is to locate the placement of the bin bracket. All bin bracket bolts must line up on the "hill" of the corrugation. If this "pre-measuring" is done correctly, no adjustments should be needed to align holes on hills after the tower is lifted into place.

ATTACHING LATERAL BRACKET, BIN BRACKET, & BACKING PLATE TO COLUMNS.

1. Align holes & attach lateral brackets (**STC00355**) to top of bottom columns using (2) 1/2" x 1" bolts, (2) 1/2" flat washers, & (2) 1/2" hex nuts for each column. **NOTE: Bolt heads go to inside of column. Do not fully tighten bolts.** (See Figure 2.)



2. Attach bin brackets (**STF00016**) and backing plates (**STF00021**) to lateral brackets using (3) 3/8" x 1" HHCS bolts, (3) spacers, (6) washers, and (3) hex nuts as shown in Figure 3 for each column. **NOTE: Bolts should be placed in the bottom half of the bin bracket slots. Fasten only finger tight to allow bin to settle.**



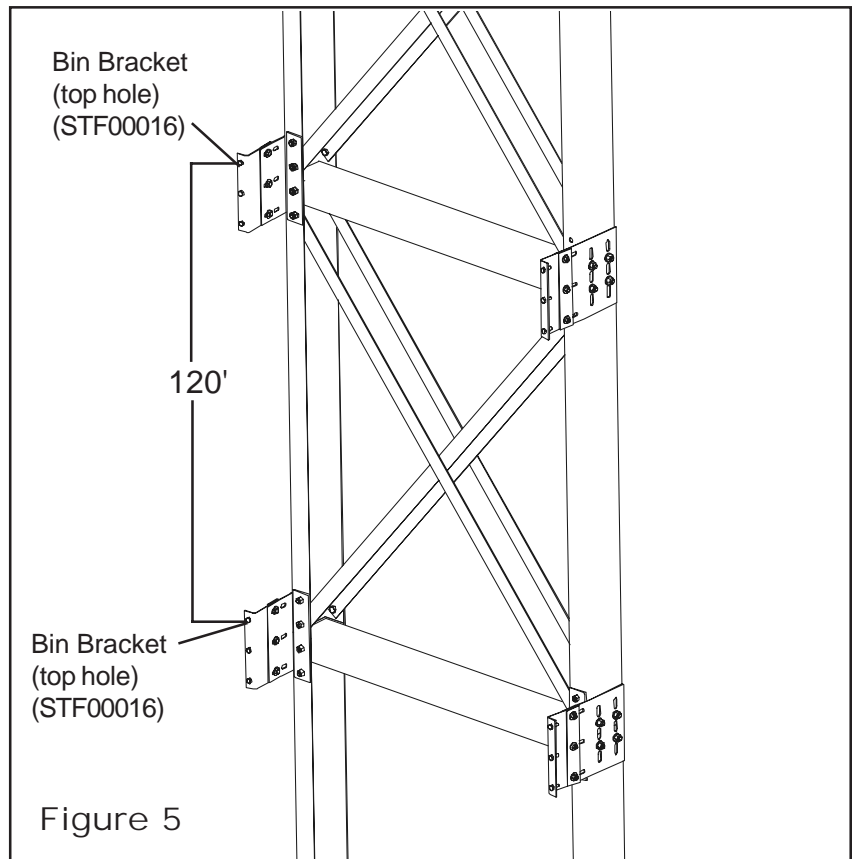
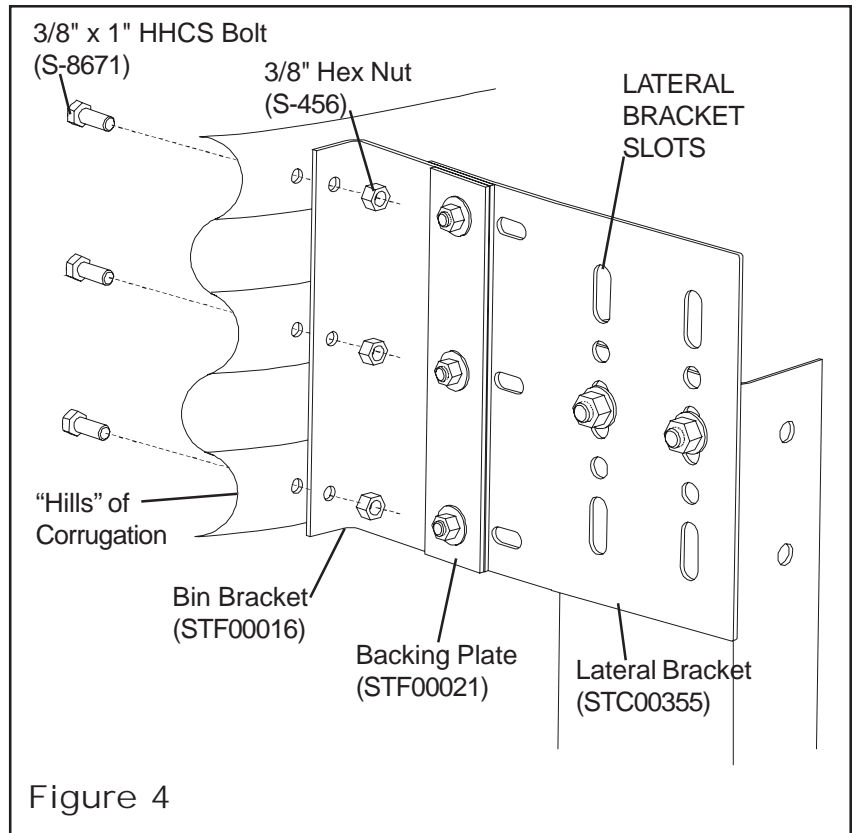
Pre-Measuring for Alignment (cont.)

3. Take columns and set on foundation so anchor bolts go through angle joints. The bin bracket bolt holes should line up on the “hills” of the corrugation. (See Figure 4.) **NOTE: Do not attach to bin, this is for alignment only.**

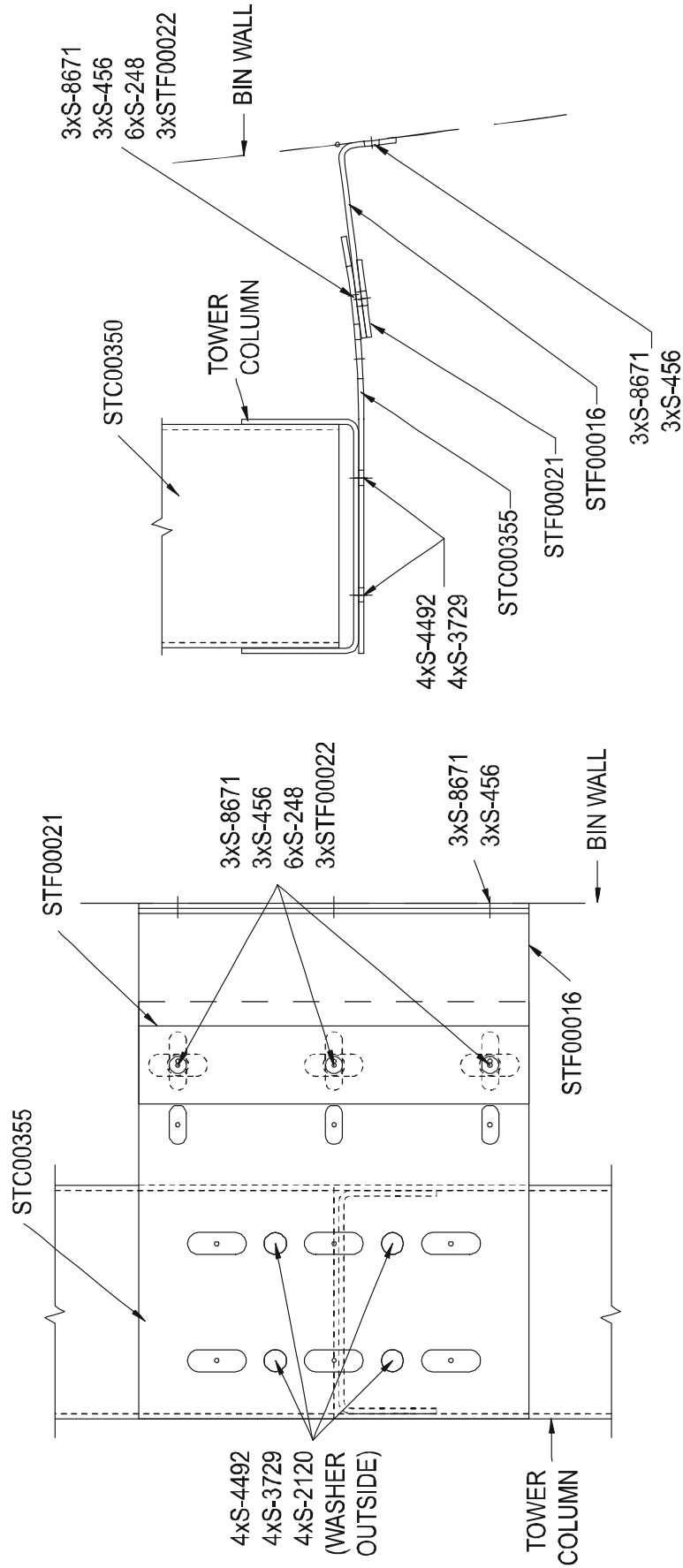
4. If holes do not line up on the “hills” of the corrugation, then you need to remove the **LATERAL BRACKET (STC00355)** from the column and re-attach it to the column using the slots in the lateral bracket. (See Figure 4.) Then adjust the lateral bracket up or down in the slots to line the holes in **BIN BRACKET (STF00016)** on the “hills” of the corrugation. Then fully tighten lateral bracket bolts.

NOTE: DO NOT use slots in **BIN BRACKET (STF00016)** for adjustment. Bolts holding lateral bracket, bin bracket, & backing plate need to stay in the bottom half of the slot to allow the bin to settle. These bolts should only be finger tight or damage may occur to the bin.

5. To make sure the next set of lateral brackets, bin brackets, & backing plates, line up on the “hills” of the corrugation, measure from the top hole of the previously installed bin bracket to the top hole on the bin bracket being installed. The holes should measure 120" apart. If they do not, then adjust the lateral bracket being installed following step #4 above, until the holes measure 120" apart. (See Figure 5.) Repeat this step for all bin brackets as the columns are installed.



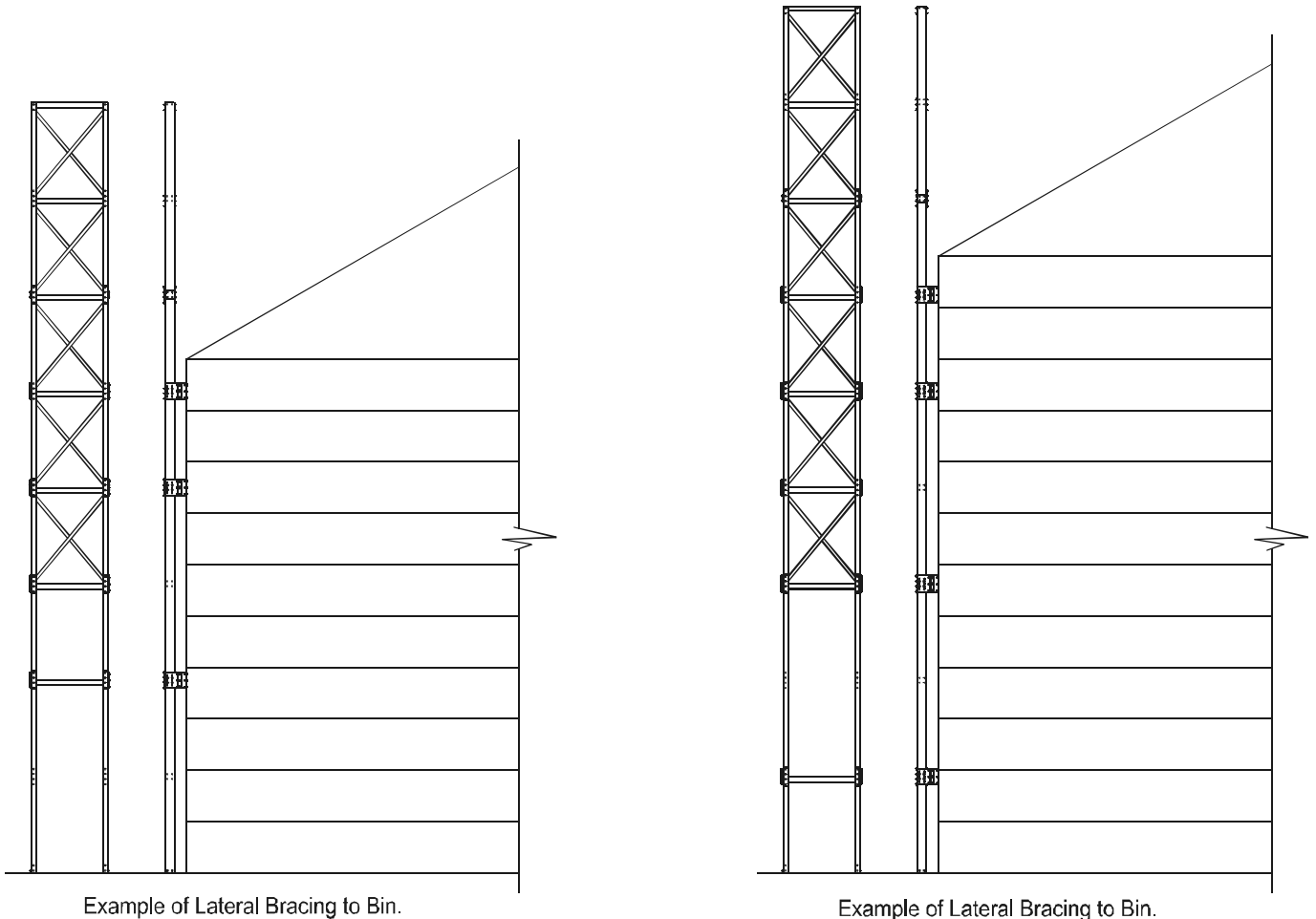
Lateral Bracket, Bin Bracket, & Backing Plate Top & Side Views



TOP VIEW

SIDE VIEW

Diagonal "X" Bracing Configurations

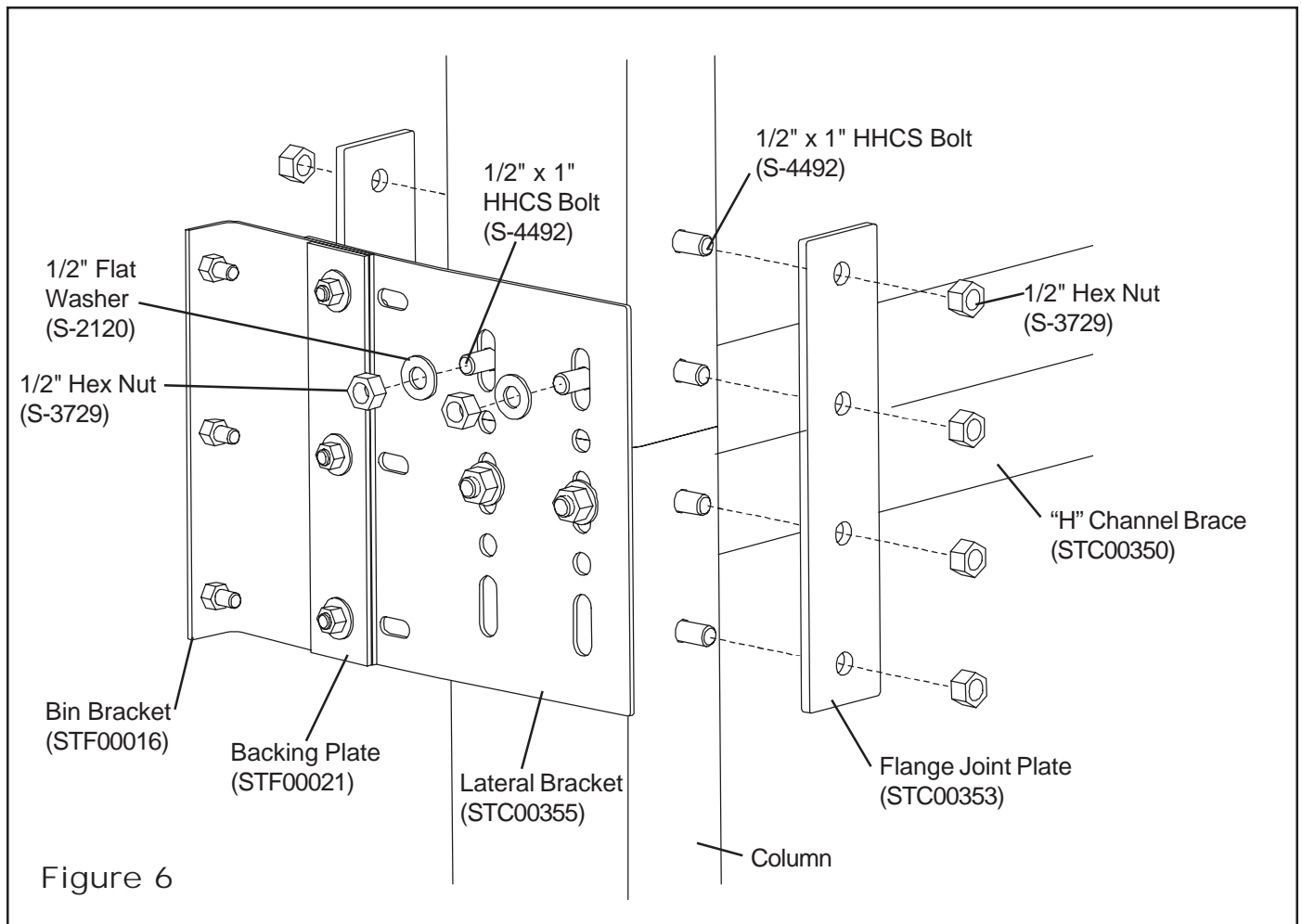


Lateral bracing is used to attach tower to grain bin.

- "X"-Bracing is to be used in all upper sections of a tower.
- All 20'-25'-30' Tall Towers should all be "X"-braced, except for the lower 10' that is not "x" braced. (See examples above.)
- All 35' and taller towers should all be "X"-braced, except for the lower 15' that is not "X"-braced. (See examples above.)

Column Joints without Diagonal "X" Bracing

1. Place next columns on top of bottom columns.
2. Fasten top column to lateral brackets (**STC00355**) using (2) 1/2" x 1" bolts, washers, & hex nuts for each column. (See Figure 6.)
3. Align flange joint plates (STC00353) with holes in columns and attach using (6) 1/2" x 1" HHCS bolts & hex nuts. **NOTE: Bolt heads go to inside of channel. Skip top hole in bottom channel until next step. DO NOT fully tighten bolts.**
4. Attach "H" channel braces (**STC00350**) to the inside of the columns and the flange joint plates using (2) 1/2" x 1" HHCS bolts and hex nuts for each column. (See Figure 6.)



Column Joints with Diagonal "X" Bracing

Review Diagonal "X" Bracing Configurations on page 17 and determine the proper layout for your bin diameter. Diagonal bracing covers 5' of vertical height, additional "H" braces are to be installed at these increments.

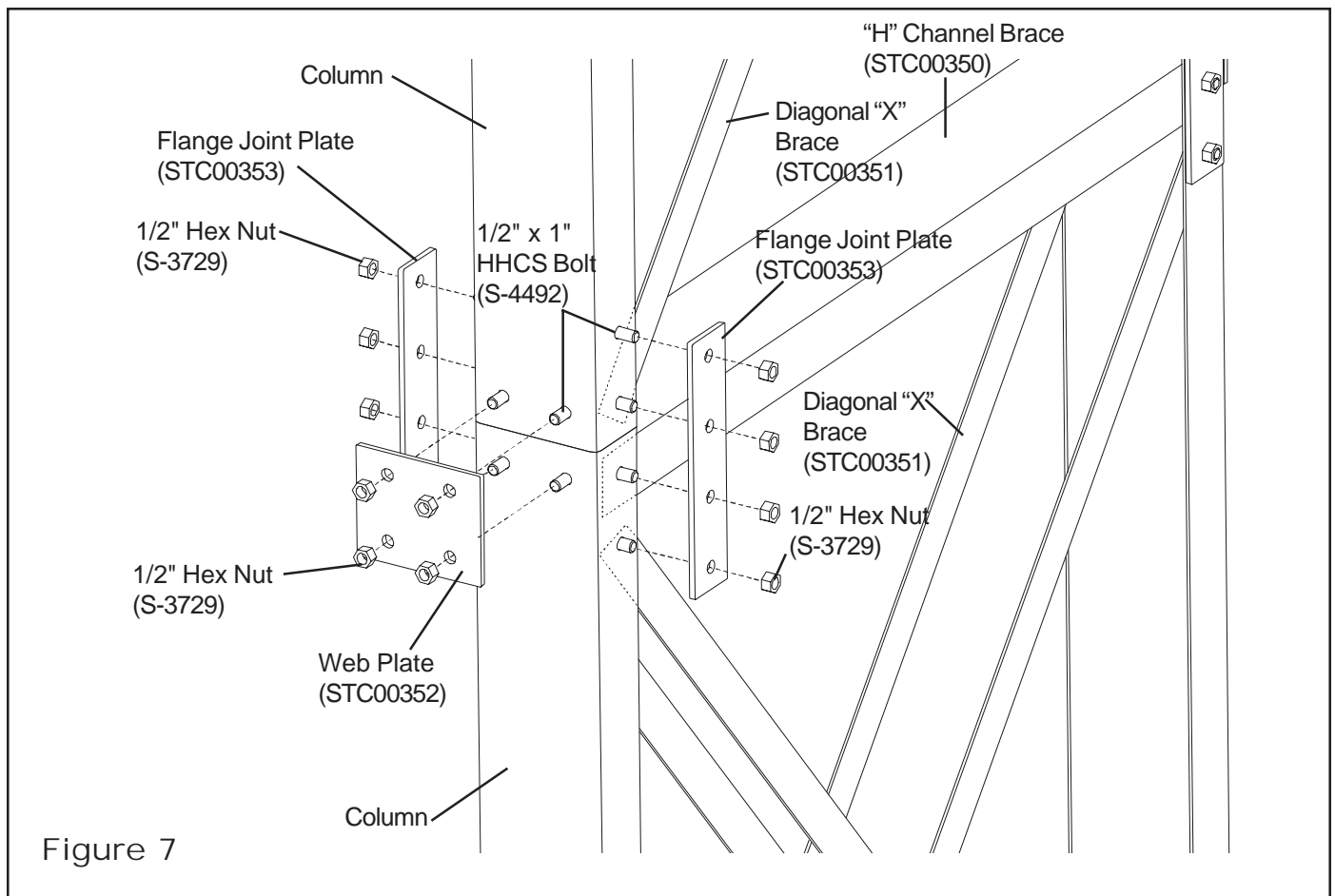
1. To install diagonal bracing, align columns on top of each other and fasten together using a web plate (STC00352), (4) 1/2" x 1" HHCS bolts and 1/2" hex nuts for each column. **NOTE: Bolt heads go to inside of column.** (See Figure 7.)

2. Using top hole, attach flange joint plates (STC00353) to columns using (2) 1/2" x 1" HHCS bolts & hex nuts for each column as shown.

3. Attach (8) diagonal braces (STC00351) to

inside of both right and left columns and flange joint plates using (8) 1/2" x 1" HHCS bolts and hex nuts. One set of four braces go above H Channel Brace (STC00350) and one set goes below. (See Figure 7.) **NOTE: Diagonal braces are located on both front and back flanges.**

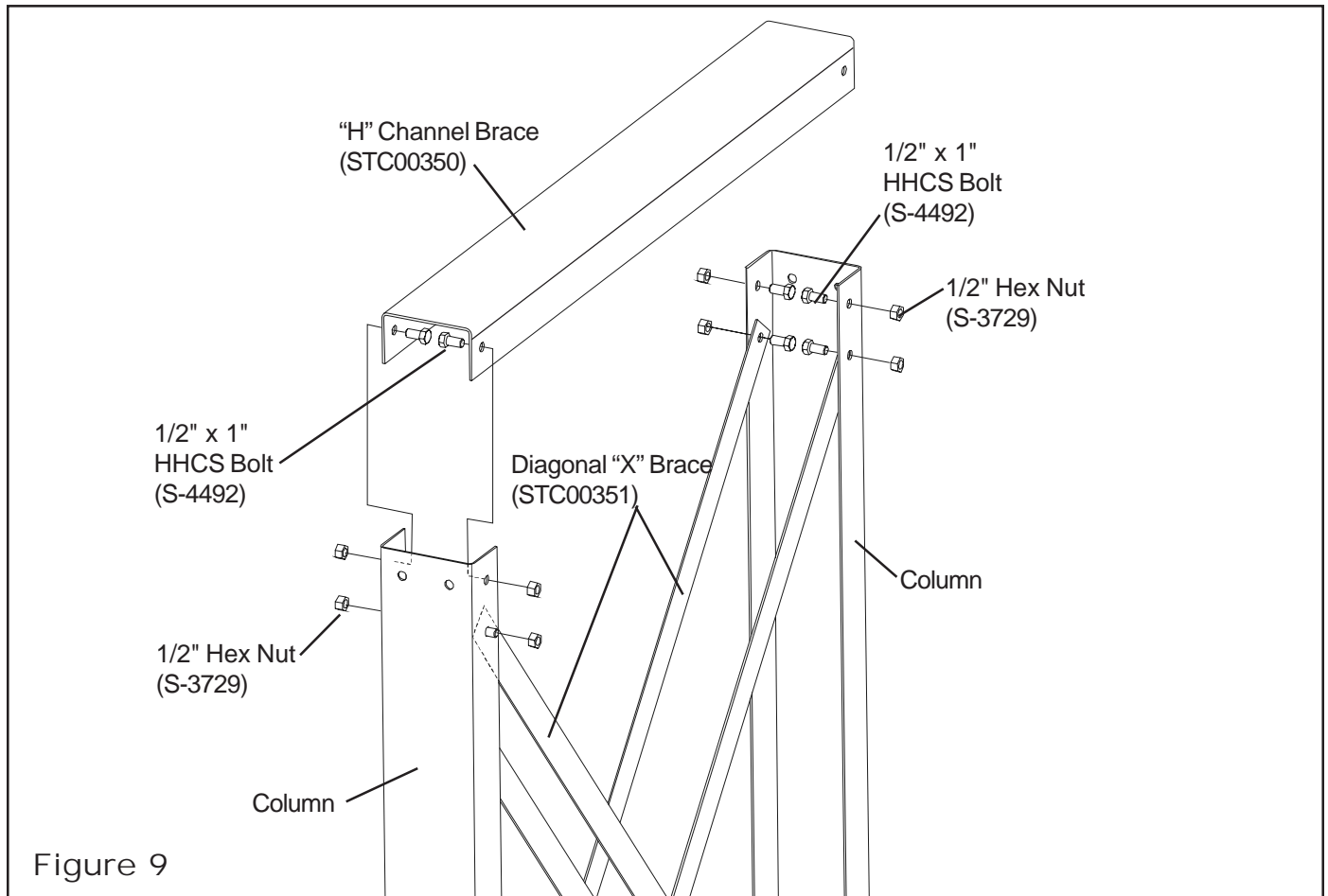
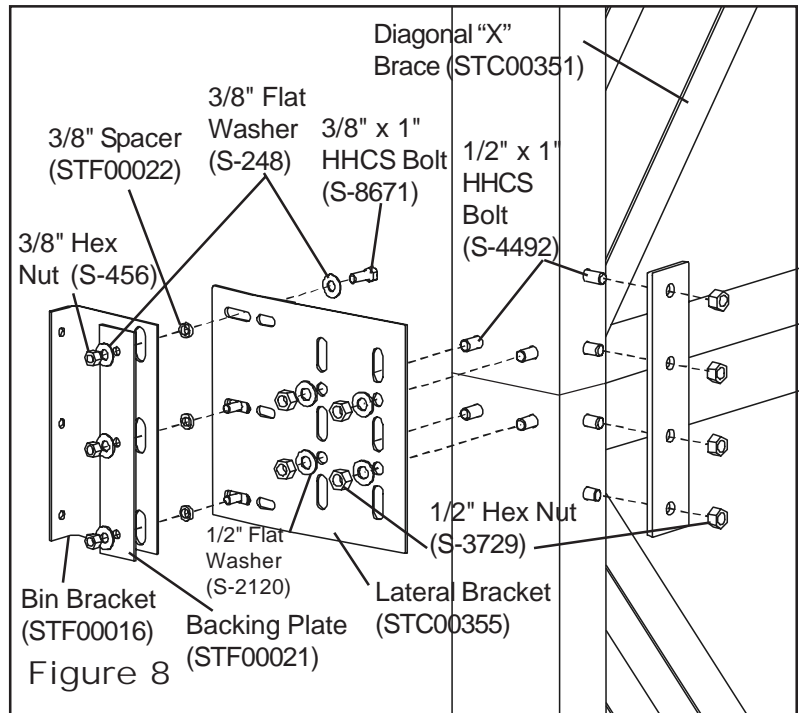
4. Attach "H" Channel Brace (STC00350) to both left and right columns and flange joint plates (STC00353) using (4) 1/2" x 1" HHCS bolts and nuts for each column. (See Figure 7.)



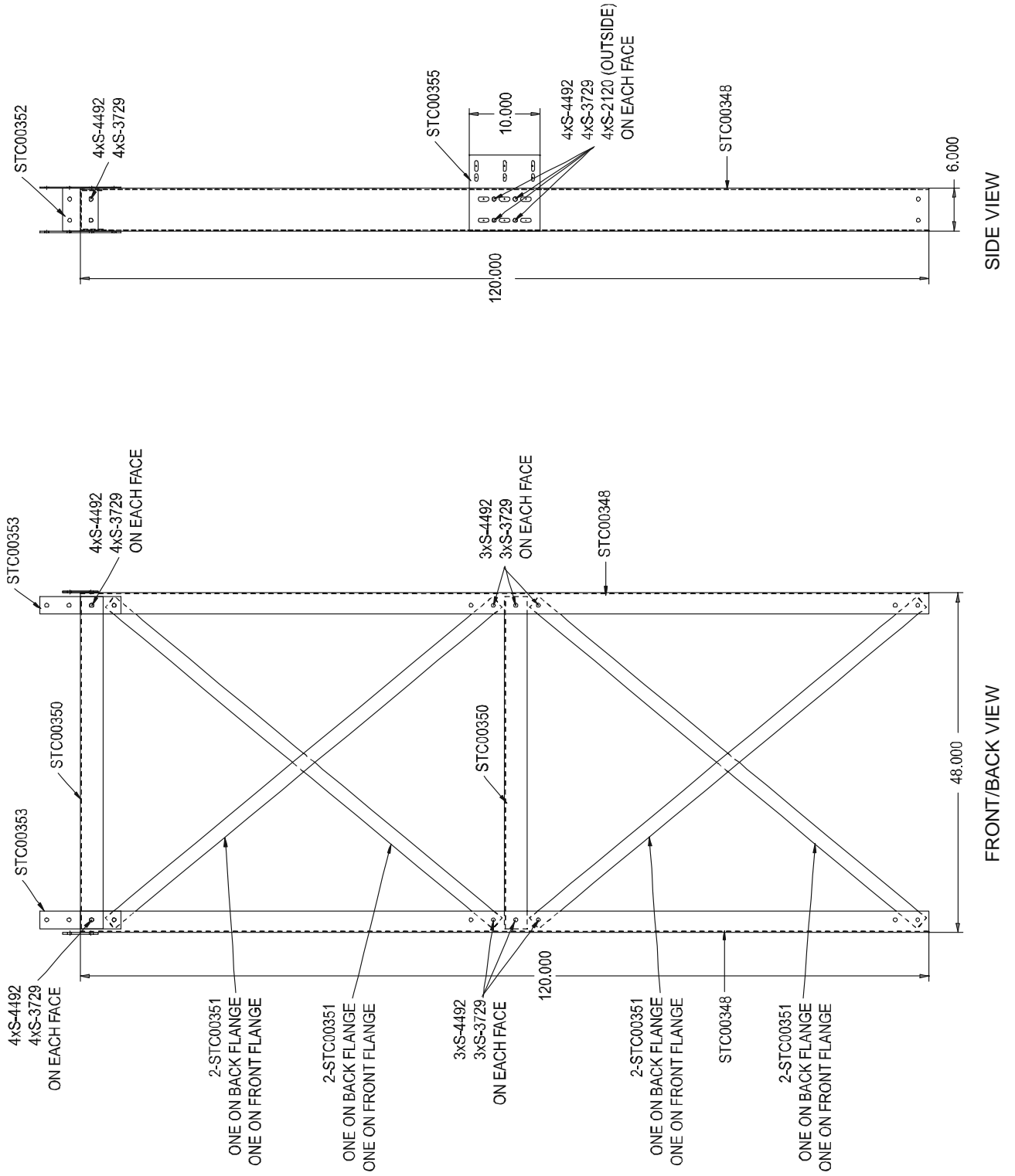
Column Joints with Diagonal "X" Bracing (cont.)

5. For "X" Bracing where a lateral bracket is used instead of a web plate, see Figure 8.

6. Install an "H" Channel Brace (STC00350) to the top of the columns and "X" bracing as shown using (4) 1/2" x 1" HHCS bolts and nuts. (See Figure 9.)



Diagonal "X" Bracing

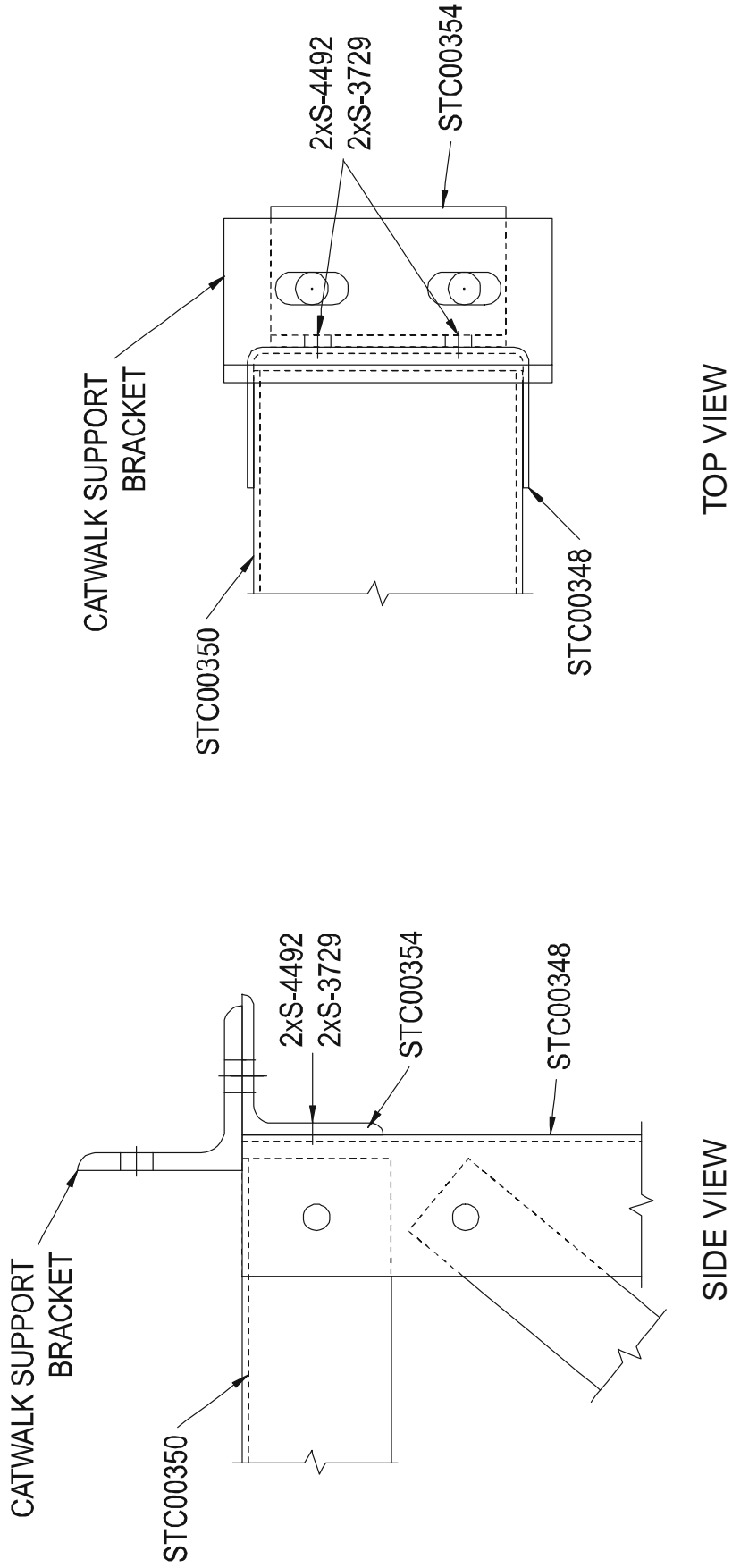


Straighten Columns and Stand Towers in Place

1. Start with one column and run a string from top to bottom, align all joints and straighten. Tighten all hardware. Repeat process for both columns. **NOTE: DO NOT tighten hardware that connects the bin bracket & backing plate to the lateral bracket. These bolts need to be finger tight only to allow bin to settle.**

2. When assembly is complete and hardware tightened. Stand tower assembly upright and set in place over anchor bolts. All bin brackets holes should line up on the hills of the corrugation. Field drill through bin brackets into hills of corrugation and bolt the tower bin brackets to bin sidewall using 3/8" x 1" HHCS bolts & hex nuts. **NOTE: Bolt heads go on outside of bin.**

Catwalk Support Brackets



DETAIL-2

NOTES

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