

Aquaponic Float Beds



*Actual float bed may differ from what is shown.

113005	FLOAT BED	4' x 8'
113006	FLOAT BED	8' x 8'
113007	FLOAT BED	16' x 8'
113008	FLOAT BED	25' x 8'
113009	FLOAT BED	39' x 8'
113010	FLOAT BED	51' x 8'

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WARNING: Cancer and Reproductive Toxicity - P65Warnings.ca.gov

Revision date: 12.23.15

Important Information

READ THIS DOCUMENT BEFORE YOU BEGIN

Thank you for purchasing this float bed. When properly assembled and maintained, this float bed will provide years of reliable service. These instructions include helpful hints and important information needed to safely assemble and properly maintain the float bed. Please read and understand these instructions **before** you begin. If you have any questions during the assembly, contact customer service.

SAFETY PRECAUTIONS

- Wear eye protection.
- Wear gloves when handling metal pipes.
- Use a portable GFCI (Ground Fault Circuit Interrupter) when working with power tools and cords.

REQUIRED TOOLS

The following list identifies the main tools needed to assemble the float bed. Additional tools may be needed.

- Tape measure and marker
- Variable speed drill (cordless with extra batteries works best)
- Small hammer and gloves
- Level (4'- recommended)
- Utility knife or scissors



UNPACK AND IDENTIFY PARTS

The following steps will ensure that you have all the necessary parts *before* you begin assembly.

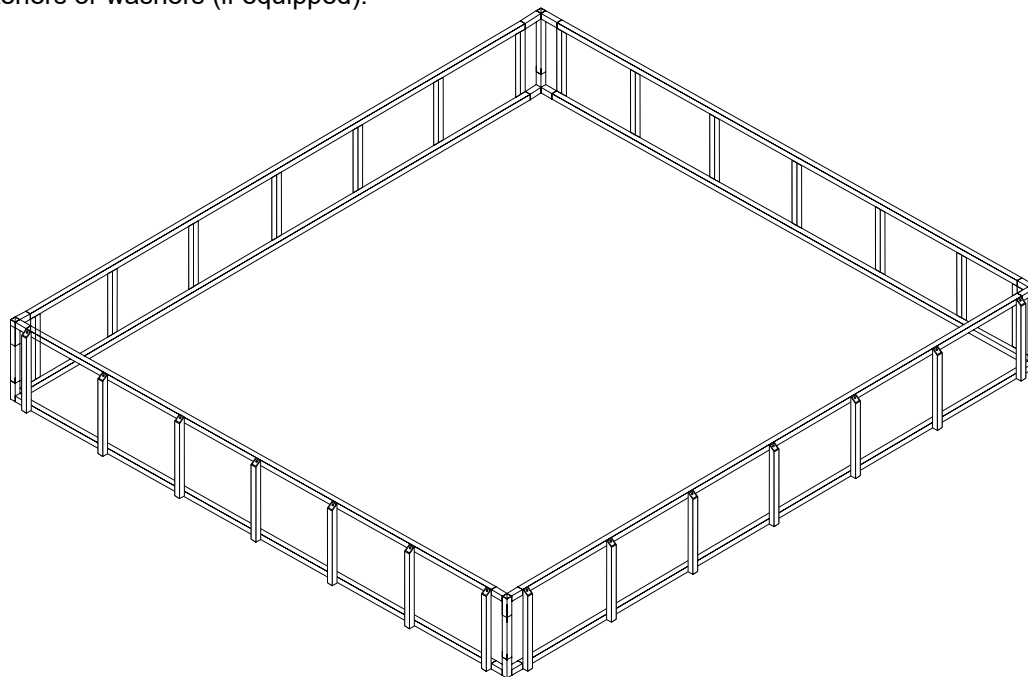
1. Unpack the contents of the shipment and place where you can easily inventory the parts. Refer to the Bill of Materials/Spec Sheets.
2. Verify that all parts listed on the Bill of Materials/Spec Sheets are present. If anything is missing or you have questions, consult the Pictorial Parts Guide and all diagrams for clarification, or contact Customer Service.

NOTE: At this time, you do not need to open the plastic bags containing smaller parts such as fasteners or washers (if equipped).



DROWNING HAZARD: Never allow children or others in or around the float bed when filled. Float bed is not a toy or swimming pool.

Always have an assistant present during cleaning and maintenance to prevent accidents.



Important Information

PICTORIAL GUIDE

The following graphics and photos will help identify the different parts of the float bed. (Some parts may not be shown.) **Sort all tubing by size before you begin for easier assembly. Consult the assembly diagrams near the back of this guide for your float bed for additional details.**



FA4472B



102921B



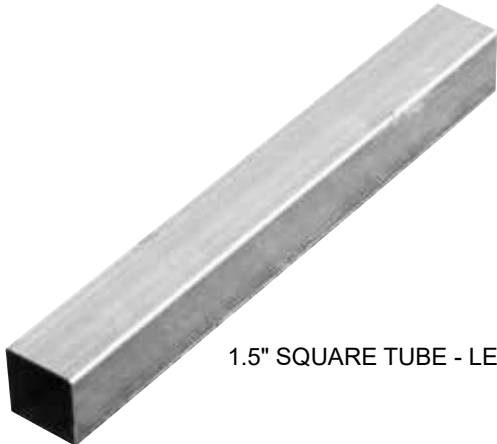
100442



LJ7510



110611



1.5" SQUARE TUBE - LENGTHS VARY



112375

Getting Started

ASSEMBLY PROCEDURES

Below are the main steps to assemble your float bed. Procedures can occur simultaneously when assistants are available, or each procedure can be completed before moving onto the next. In most instances, the site and available space drive which procedures can be completed first before moving onto the next. Review this entire guide before you begin to ensure that you understand how to position and connect the different components.

1. Determine the position of the float bed. Allow space all around the float bed for maintenance and harvest activities.
2. Construct the float bed as shown in the diagrams. **Float bed requires a flat, level surface free of debris and obstructions.** Install and assemble the frame according to instructions.
3. Install insulation and Tek foil liner.
4. Install float bed heat tubing.
5. Install the float bed liner.
6. Fill bed with water and check for leaks.
7. Prepare and install plant rafts.
8. Read and follow the care and maintenance information.

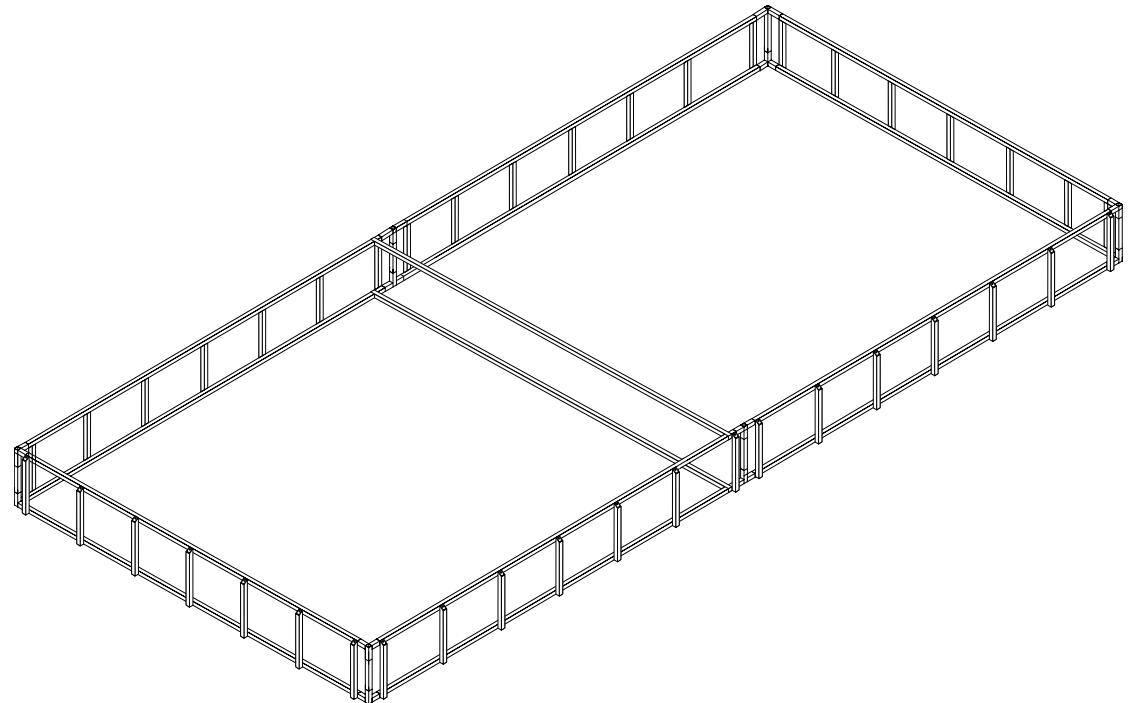
BASIC CARE AND MAINTENANCE

Daily

1. Check water level in float bed.
2. Check and maintain desired water temperature.
3. Check liner for leaks.
4. Check water condition according to your growing needs.
5. Keep the area around the float bed clean and picked up. Do not allow miscellaneous tools or maintenance and harvest equipment to stack up against the float bed.

Monthly

1. Check all frame fittings and fasteners.
2. Test water hardness and other parameters according to your growing needs.



Assemble the Float Bed Frame

1

Use the photos below and the frame diagrams for your float bed frame located near the back of this guide.

ATTENTION: Do not install any FA4472B Tek screw along the top edge of the float bed frame. This surface is reserved for the installation of the float bed liner.

Required parts:

- 110611 3-Way Corner Insert (8)
- S15P016 Square Tube @ 16" (4)
- 104779 End Frame Tube @ 96" (4)
- Side Frame Square Tubing (See drawings for your float bed for tubing ID and position.)
- 112375 Square Tube @ 15-3/4" w/45° Cuts (See drawing for your float bed.)
- FA4472B Tek Screws
- 100442 Magnetic Nut Setter



1. Install all 16" (S15P016) tubes flush with the open end of each 110611 3-way corner connector.



2. Install all FA4472B Tek screws into the sides of the fittings. **Do not install along the top frame rail.**



NOTE: Do not install any Tek screws in a location that will touch the liner once it is installed.



3. Install the first and last vertical support for each end or side wall tight against the 3-way corner connectors.



4. Install all vertical supports for side and end frame flush with the horizontal tubes.



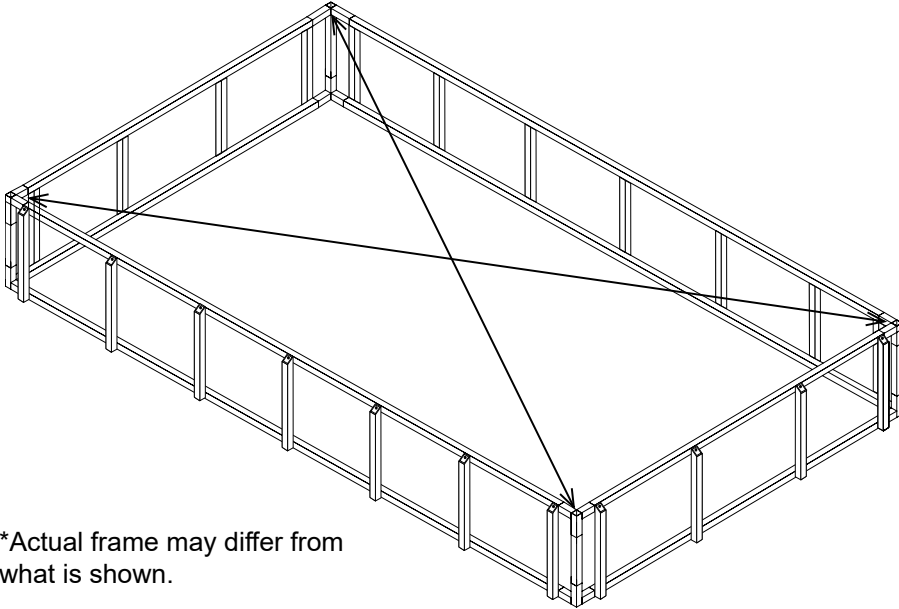
5. Use the diagrams located in the back of these instructions to evenly space the vertical supports along the sides of your float bed.

Assemble the Float Bed Frame—continued

1

Square the Assembled Float Bed Frame*

After assembly, check all connections to verify that Tek screws are properly installed. Next, measure corner-to-corner diagonally as shown. When dimensions are the same, frame is square. Finally, level the frame. Prepare the site inside frame if not on a solid surface such as wood or concrete.



*Actual frame may differ from what is shown.



Insulate Float Bed Frame

2

Insulate the Float Bed Frame

Once the frame is level, use the rigid board insulation to insulate the sides of the frame and the surface that supports the bed liner. The frame shown in the example below may differ from the actual frame. Steps to insulate are similar. Use the photos as guides to insulate your float bed frame.



1. Measure and cut the insulation to the required size.



2. Working from inside the frame, install the insulation panels.



3. Continue this pattern until the ends and all sides of the frame are insulated.



4. Next, insulate the floor of the float bed frame by placing the rigid board insulation into position.



5. Begin at one end and work toward the other. Level the surface if needed to create an even base for the liner. Cut panels to the needed dimensions.



6. Before installing the liner material, inspect the bed surface and remove any debris that could damage the liner.

Install Tek Foil Liner

3

Install Tek Foil Inside Frame

After installing the rigid board insulation, add the Tek foil. Use the supplied duct tape to hold the foil in place during installation. Overlap the seams as needed to ensure proper coverage. Neatly fold foil at the corners to allow for an easier installation of the bed liner.



Install Float Bed Heat Tubing

4

Install Heat Tubing for Float Bed

If needed, consult the services of a qualified contractor familiar with the installation of similar heating systems.

In order to maintain a constant water temperature, in many climates it is necessary to heat water. Your float bed includes tubing; however, additional purchase is required for the remainder of components needed. **Contact your sales representative for additional details.** Use photos that follow to install tubing.

ATTENTION: Regardless of float bed size, follow these general guidelines:

- Maximum length of any tube loop should not exceed 300';
- There should be at least two (2) loops per float bed;
- Loops must be of equal length.



1. Tape both ends of tubes to prevent dirt and debris from entering during installation.



2. Determine where you want tubes to enter and exit float bed and create holes in rigid board and foil.



NOTE: Allow a few feet of tube to extend beyond frame to connect to heating unit. (Additional purchase required for heating unit and parts.)



3. Determine a pattern and install tubing in evenly spaced rows throughout float bed. Install outside runs close to frame edge. **Allow approximately 10" between the individual runs of tubing.**



ATTENTION: Photos show using special clips to hold tubing. These are not supplied. Use the supplied duct tape and tape tubing to the foil. Once liner is installed and filled with water, tubing will not move. **Do not use metal wire or staples to secure tube.**



4. After installing tube loops, inspect area and remove any dirt and debris that could damage liner material.
5. Continue with the installation of the float bed liner.

Install Float Bed Liner

5

Once the liner bed is prepared, continue with the installation of the liner. Assistants are required.

Required Parts:

- 110097Sx Liner (Dimensions depend on float bed model.)
- FA4472B Tek Screws, 102921B Washers, and 100442 Nut Setter

ATTENTION: During the installation of the liner, do not drop any tools or sharp objects into the liner bed. Doing so can puncture the liner! Exercise caution!



1. With assistance, carefully spread the liner over the assembled frame. Ensure that equal lengths overhang each end and side.



2. Beginning at one corner, carefully work the liner into the corner and along the inside of the base rails.



3. Fold the liner evenly into the corner and up and over the top of the frame rails. Try to remove as many wrinkles as possible.



4. Take two (2) FA4472B Tek screws and two (2) 102921B neo-bonded washers and carefully secure the liner to the top of the frame.



NOTE: These fasteners will be removed after the entire liner is in position and the aluminum retaining strap is prepared for installation.



5. Move to another corner and press that liner into place.

Install Float Bed Liner—continued

5

LINER INSTALLATION—CONTINUED

ATTENTION: During the installation of the liner, do not drop any tools or sharp objects into the liner bed. Doing so can puncture the liner! Exercise caution!



6. Cut the material as needed to allow it to fit more evenly at the corners.

ATTENTION: Do not drop any sharp objects into the bed liner at any time. Contact your sales representative for products used to repair damage to the liner if needed.



7. Repeat the steps to secure the liner material.
8. Check the bottom of the liner for wrinkles and remove these by working the material toward the free edge of the liner.



9. Start adding water to the float bed to allow the water to seat the liner inside the frame.

NOTE: Once the liner is fully secured, there should be no tension on the fasteners. Adding water now helps to achieve that result.



10. Move to the remaining corners and repeat the steps to temporarily secure them to the frame.



11. While the bed continues to fill, remove any excess material that touches the ground. Allow 8"-10" to remain for the final steps. It will be used to pull the liner into final position.

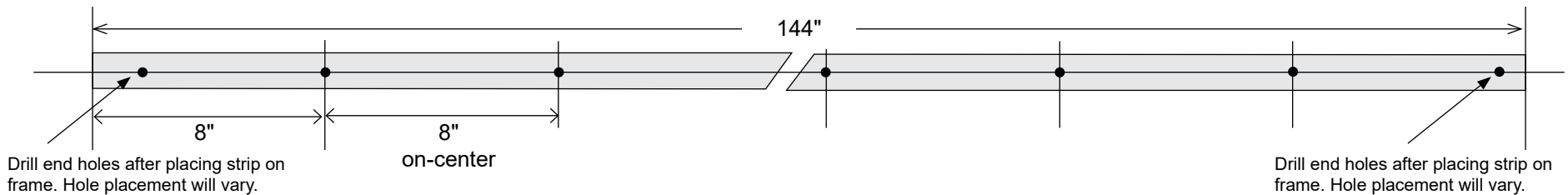


12. Continue filling until bed is half full.
13. Complete the steps to prepare and install the aluminum retaining strap.

Prepare and Install Aluminum Retaining Strap

6

Take the 112480 aluminum flat stock and mark the mounting hole locations according to the diagram below. Use a 1/4" drill bit to drill the fastener holes in the center of the stock at 8" on-center. *Do not drill these around or on the float bed frame or liner. Doing so can cause fillings to drop into the water.* Drill in a drill press if possible to keep holes uniform. Cut drilled stock to length as needed during installation. Attach aluminum retaining strap to frame using the FA4472B Tek screws.



1. Begin at a corner and remove the Tek screw and washer to install first prepared strap.



2. Align strap with end of frame and attach using the FA4472B Tek screw.



3. Grip edge of bed liner with duck-bill locking pliers or similar tool.



4. Apply slight downward force to stretch liner material and secure strap with Tek screws.



5. Continue attaching straps to the frame until the entire perimeter of the bed liner is secure.



6. Using a utility knife or scissors, remove excess bed liner material. Allow 2"-3" to remain below the edge of the retaining strap.

7

FLOAT BED CHECK BEFORE USE

After the float bed is completely assembled, follow the guidelines below to complete a final check.

ATTENTION: This manual describes how to set up your float bed and check for proper operation. Additional information is presented regarding the basic maintenance of the bed. This manual does not however describe how to grow various types of fish and plants. Since the specifics of such an undertaking would fill many books, it is best to determine beforehand exactly how you want to use this float bed. Water quality, location, growing environment, available resources, personal knowledge and experience among other things all must be considered before populating your float bed with fish and plants. Consult with your sales representative for additional resources and information to ensure a successful start.

Complete these steps:

1. Fill the float bed with water and test for leaks.

Water quality is extremely important. For well water, consult all documentation that you have that pertains to what you plan to grow, and test the water according to those recommendations. If you are using a chlorinated water supply, determine what is used to chlorinate the bed. If chlorine gas is used, allow the chlorinated water to “off-gas” for 48 hours after filling the bed to remove all chlorine. If the water source uses chlorimine to chlorinate the water and not chlorine gas, you may need to consider an alternative water source. Chlorimine will not “off-gas” and can kill fish.

2. Check and adjust water temperature in the float bed.

Accurate water temperature can be the difference between life and death for your fish. Consult documentation that describes the environment your fish need. The float bed includes insulation and heat tubes installed under the bed liner. This tubing should be connected to a water heater (additional purchase required) to help control the temperature of the water in your float bed. In some climates, it may be necessary to keep the water cooler than the ambient air. Consult with your aquaponic representative for additional information regarding the heating and cooling of your float bed's water.

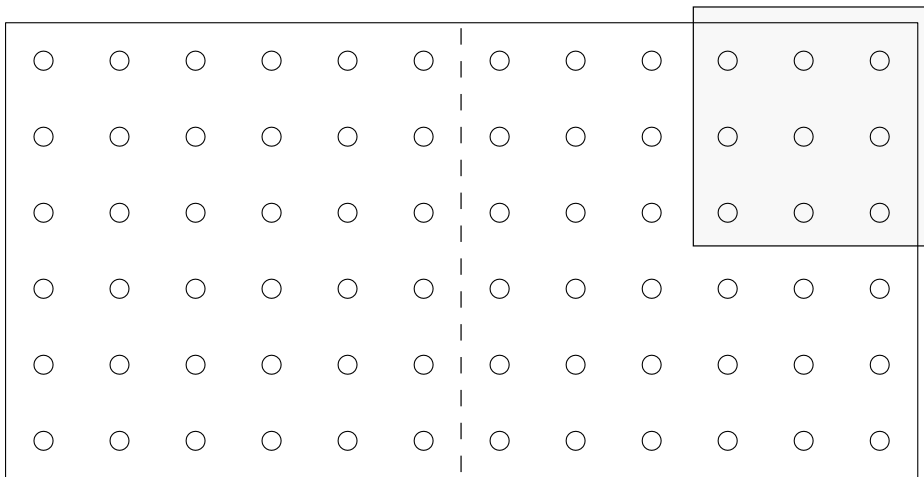
3. Prepare the plant rafts.

Prepare Plant Rafts

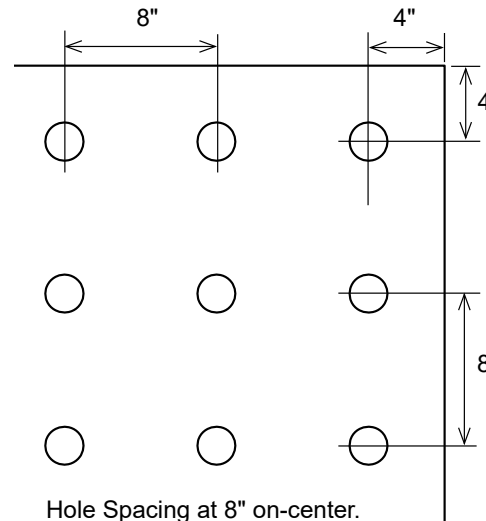
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Prepare Plant Rafts

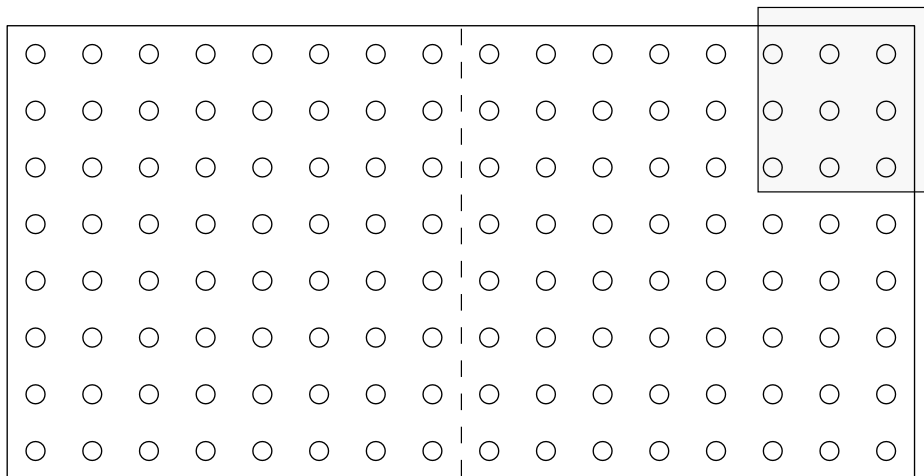
The templates below show two of many different ways to prepare the plant rafts. (There are other patterns.) Each has its advantages. Determine the best pattern for your growing needs and prepare the 4' x 8' rigid foam boards as needed. Rafts can be cut in half (see dashed line) for easier handling and harvesting. Layout the desired pattern and drill the holes. Hole size depends on what plants you intend to grow and the medium that you will use. Consult with your sales representative for additional information about growing plants in your float bed.



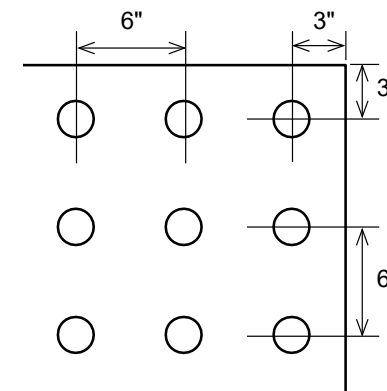
72 Locations: Hole Spacing at 8" on-center (non-staggered)



Hole Spacing at 8" on-center.



128 Locations: Hole Spacing at 6" on-center (non-staggered)



Hole Spacing at 6" on-center.



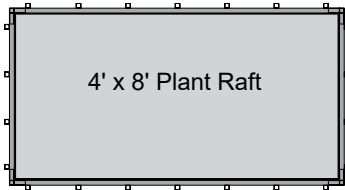
A step bit* allows for drilling a uniform size hole through the rigid foam board. It also allows you to drill a tapered hole. Determine which type of hole is needed for your planting needs and prepare the rafts accordingly.

*Step bit is not included. Purchase locally if needed.

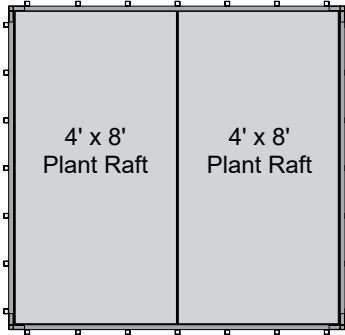


Photo above shows drilling holes in the rigid foam board using a step bit. Hole pattern is staggered.

Plant Raft Layouts

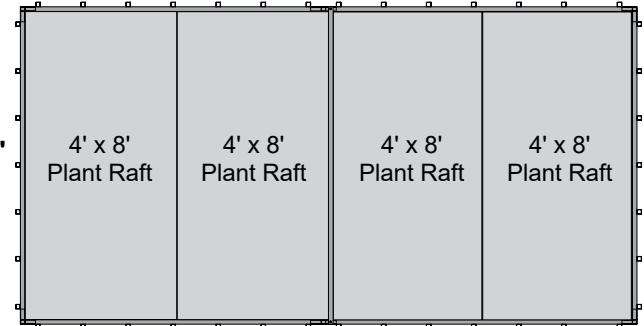


113005 Float Bed 4' x 8'

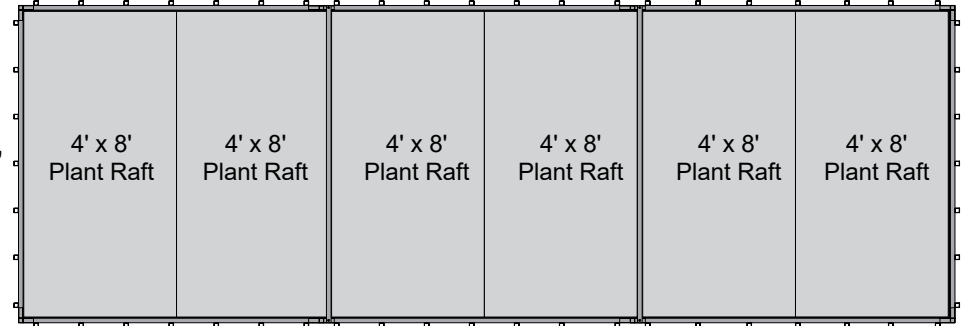


113006 Float Bed 8' x 8'

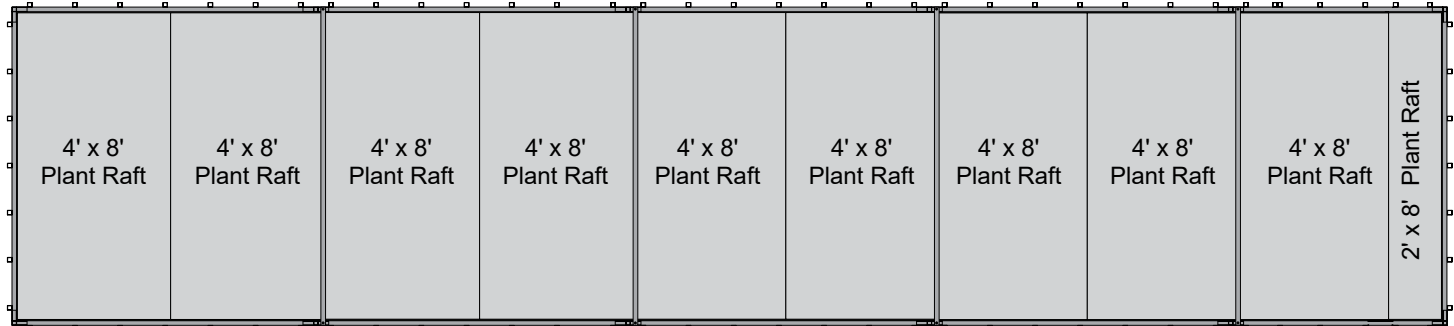
113007 Float Bed 16' x 8'



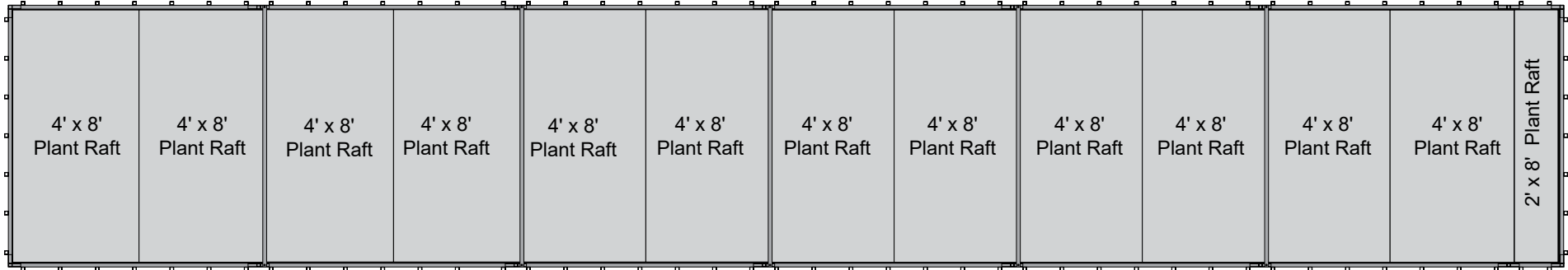
113008 Float Bed 25' x 8'



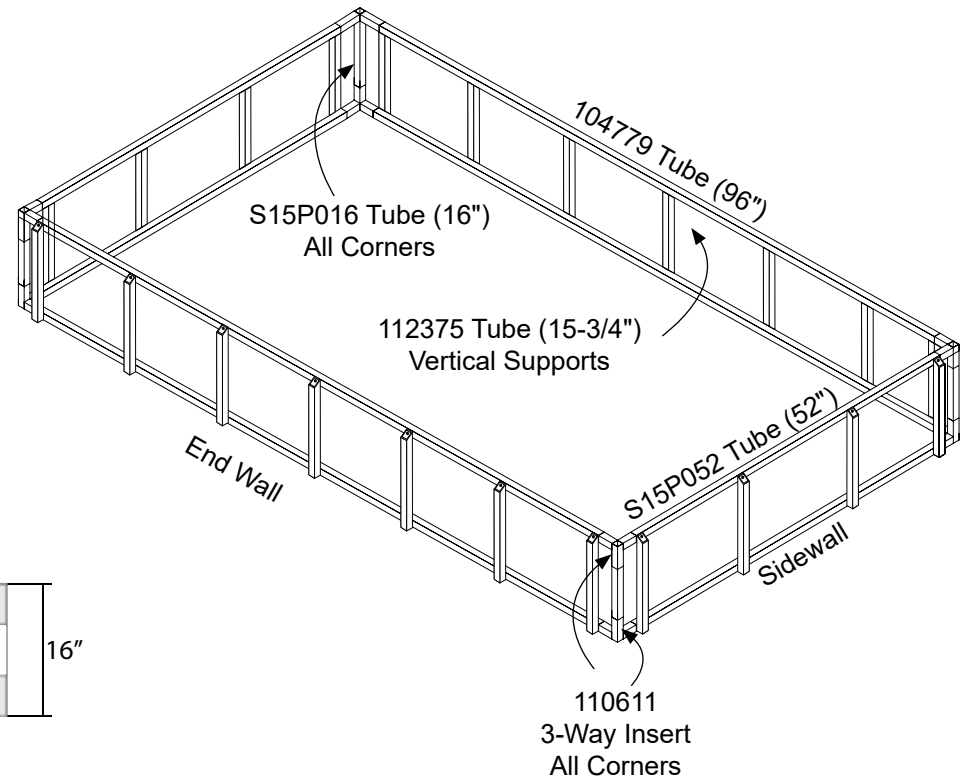
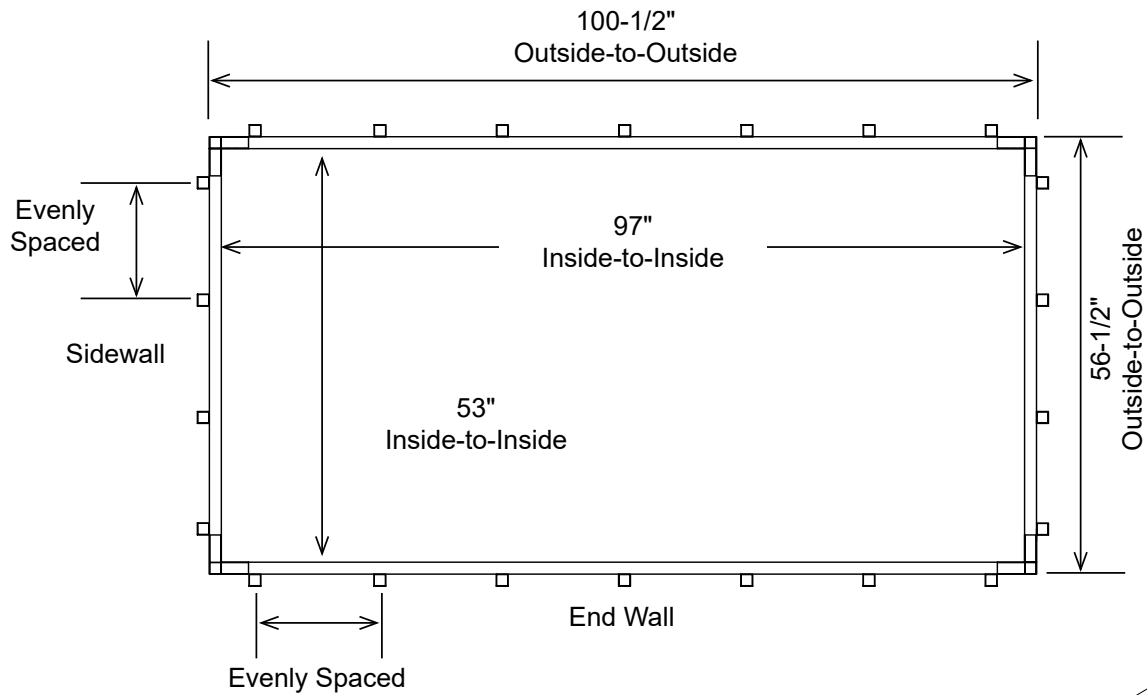
113009 Float Bed 39' x 8'



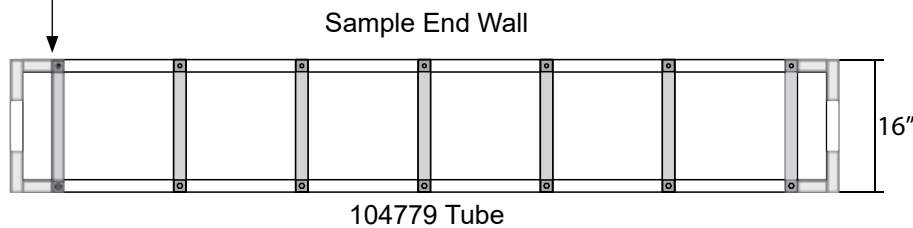
113010 Float Bed 51' x 8'



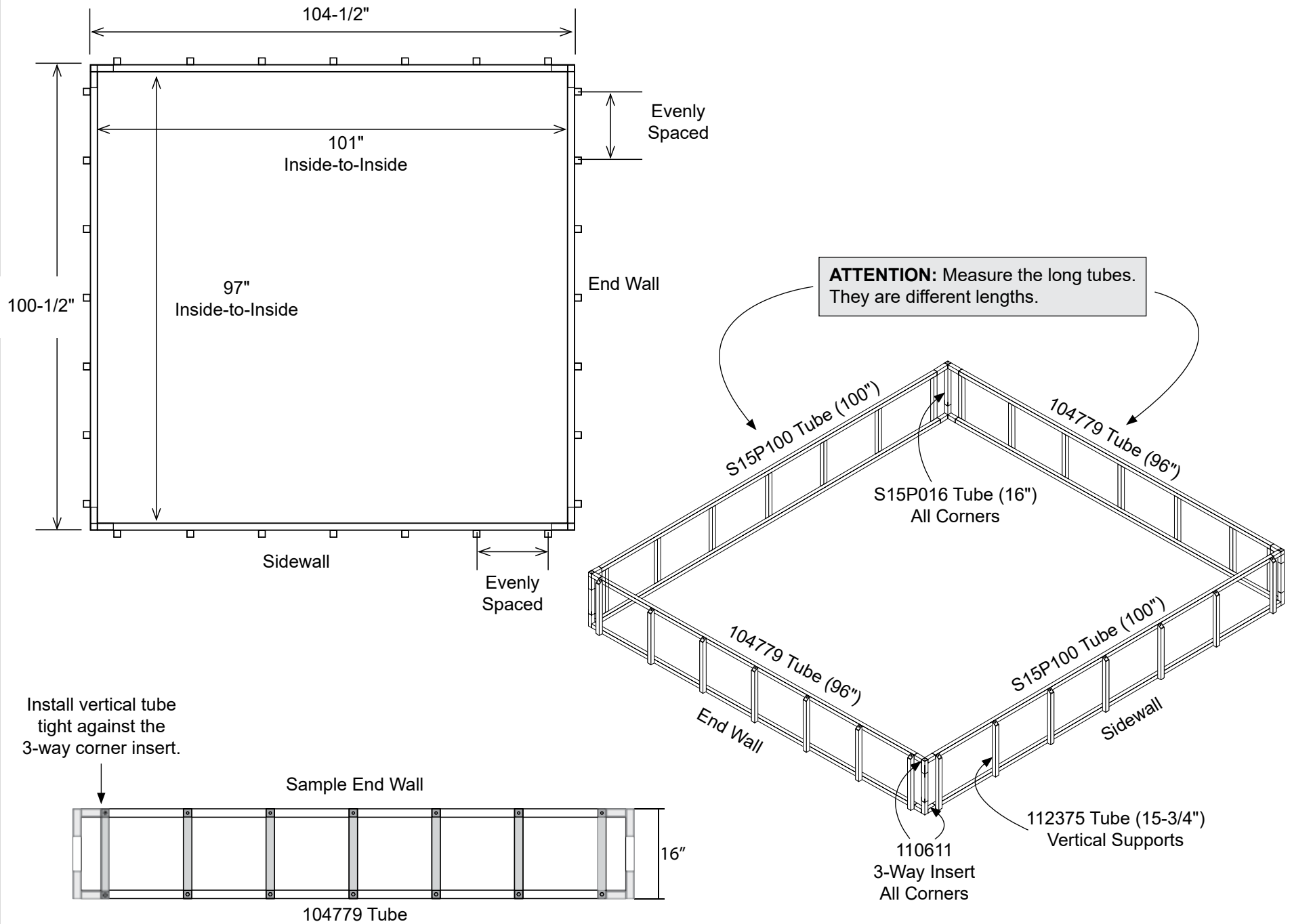
113005 Frame Dimension Diagram - 4' x 8' Float Bed



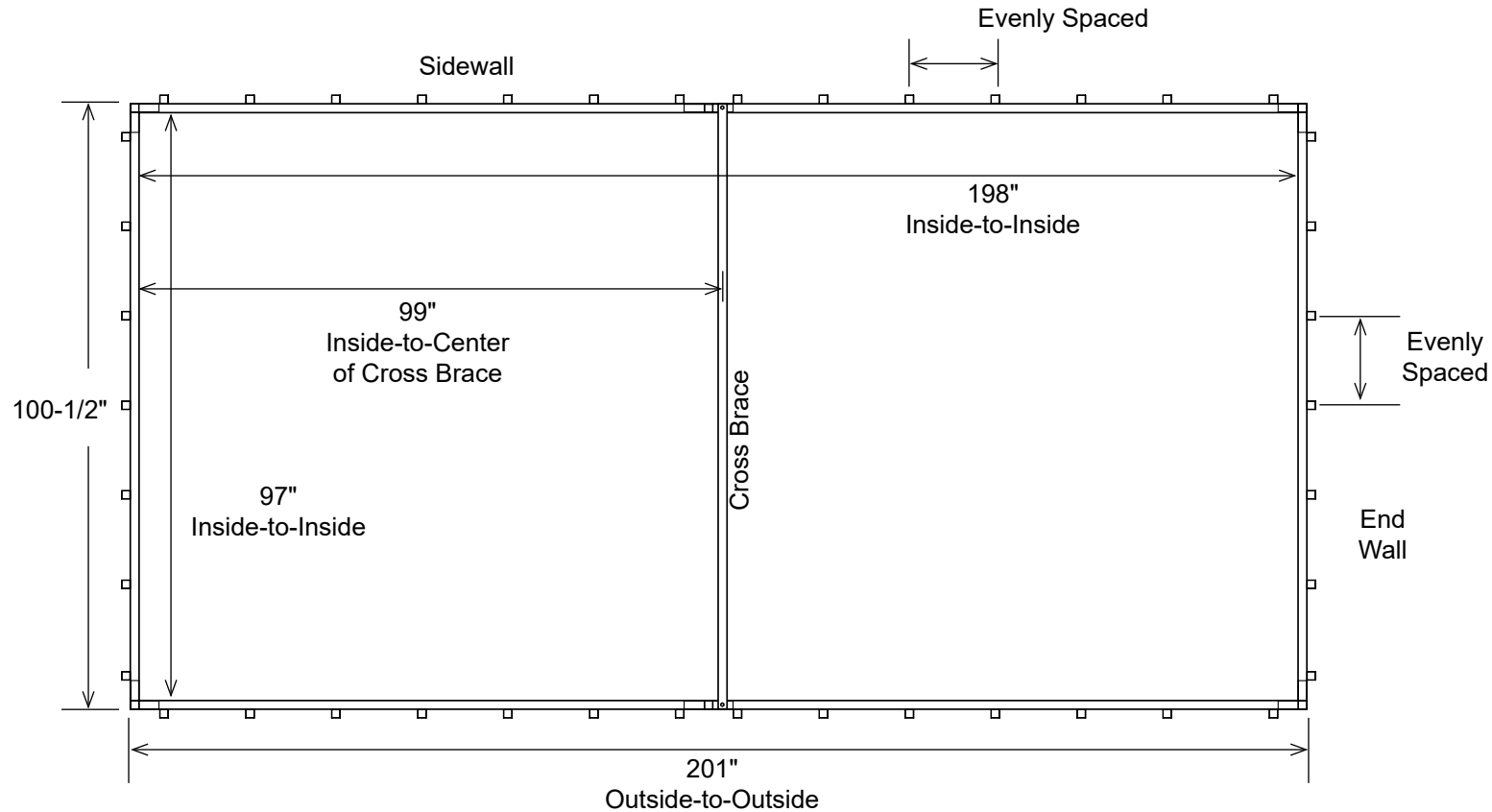
Install vertical tube
tight against the
3-way corner insert.



113006 Frame Dimension Diagram - 8' x 8' Float Bed



113007 Frame Dimension Diagram - 16' x 8' Float Bed

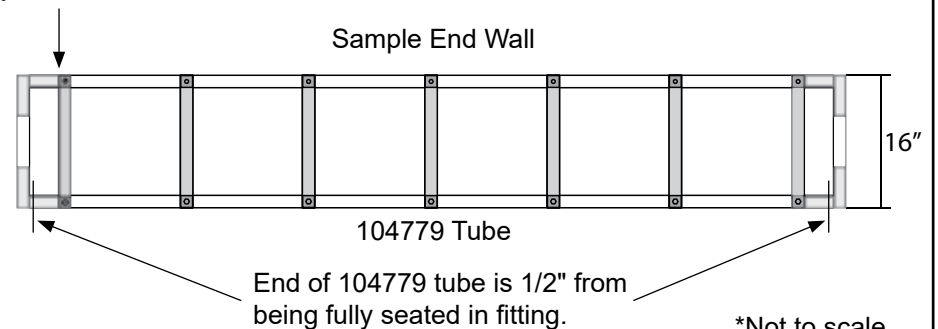


ASSEMBLY NOTE: During the assembly of the frame, take note of the inside dimensions. Some tube assemblies do not need seated tightly in the corner fittings.

For example, you must allow at least 1/2" to remain between the tube end and the corner fitting to achieve the 97" inside-to-inside dimension. Seating the 96" tube tight to the inside of the corner fitting will result in a dimension that is too narrow to accept the 96" lettuce rafts.

When setting inside dimensions always evenly divide the space between the couplers. At least 2" of any tube must remain within a coupler, fitting, or other tube.

Install vertical tube tight against the 3-way corner insert.

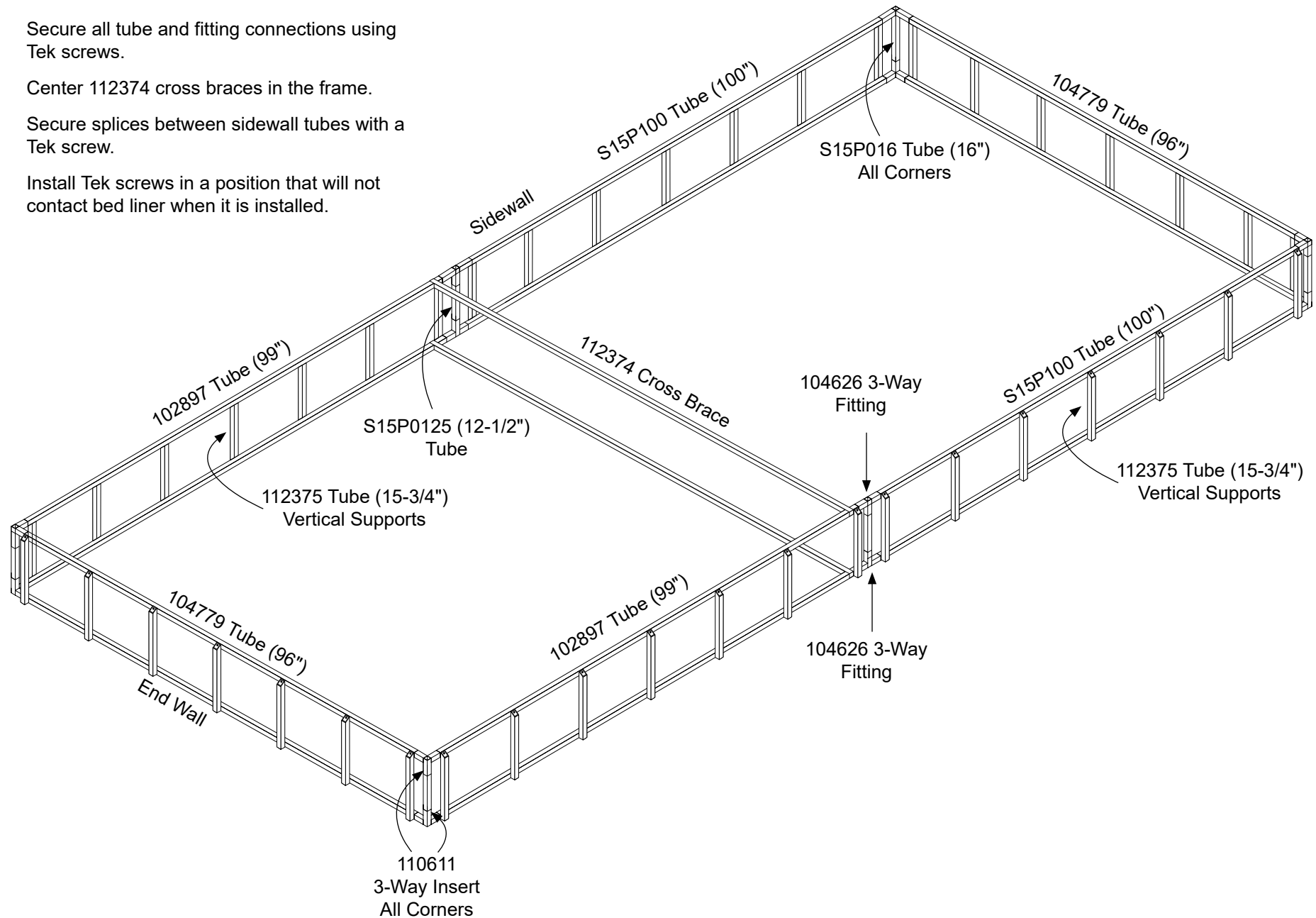


*Not to scale.

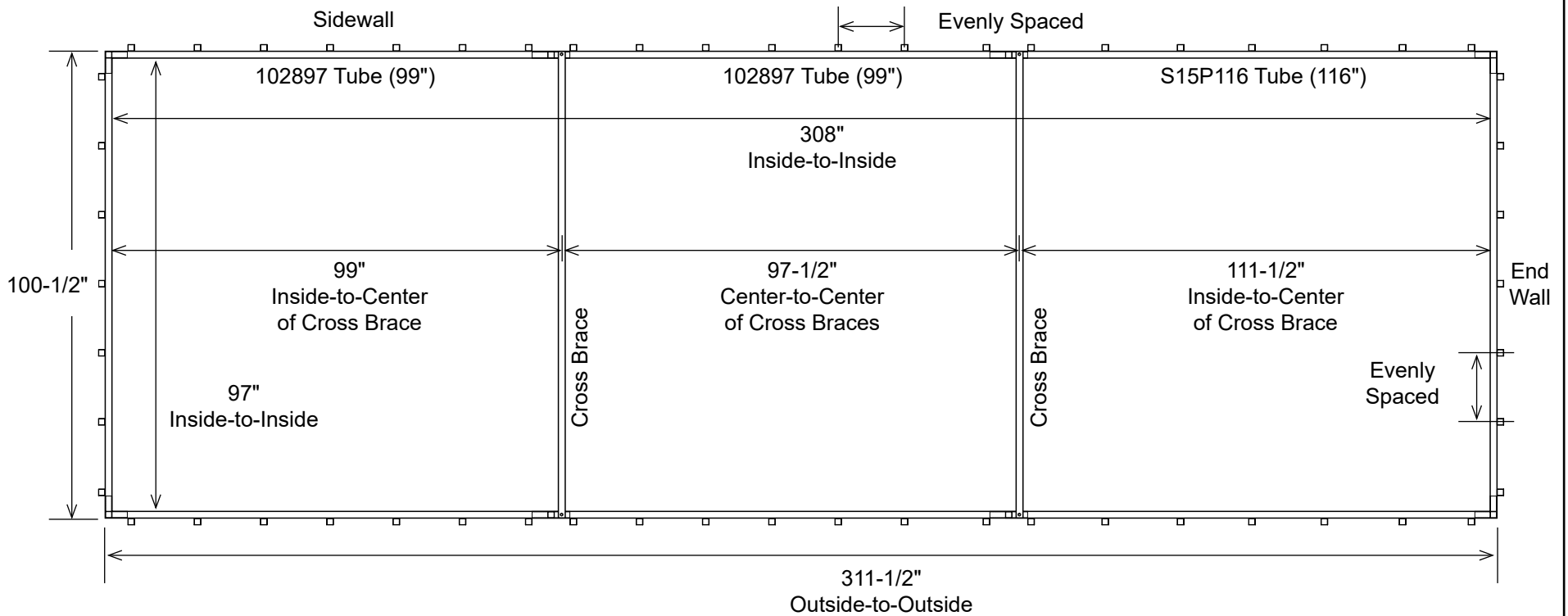
113007 Frame Dimension Diagram - 16'x8' Float Bed

ASSEMBLY NOTES:

- Secure all tube and fitting connections using Tek screws.
- Center 112374 cross braces in the frame.
- Secure splices between sidewall tubes with a Tek screw.
- Install Tek screws in a position that will not contact bed liner when it is installed.



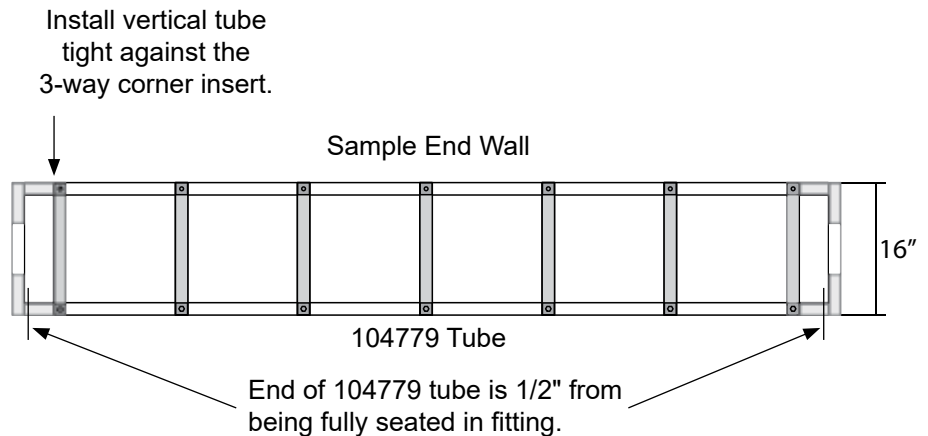
113008 Frame Dimension Diagram - 25' x 8' Float Bed



ASSEMBLY NOTE: During the assembly of the frame, take note of the inside dimensions. Some tube assemblies do not need seated tightly in the corner fittings.

For example, you must allow at least 1/2" to remain between the tube end and the corner fitting to achieve the 97" inside-to-inside dimension. Seating the 96" tube tight to the inside of the corner fitting will result in a dimension that is too narrow to accept the 96" lettuce rafts.

When setting inside dimensions always evenly divide the space between the couplers. At least 2" of any tube must remain within a coupler, fitting, or other tube.

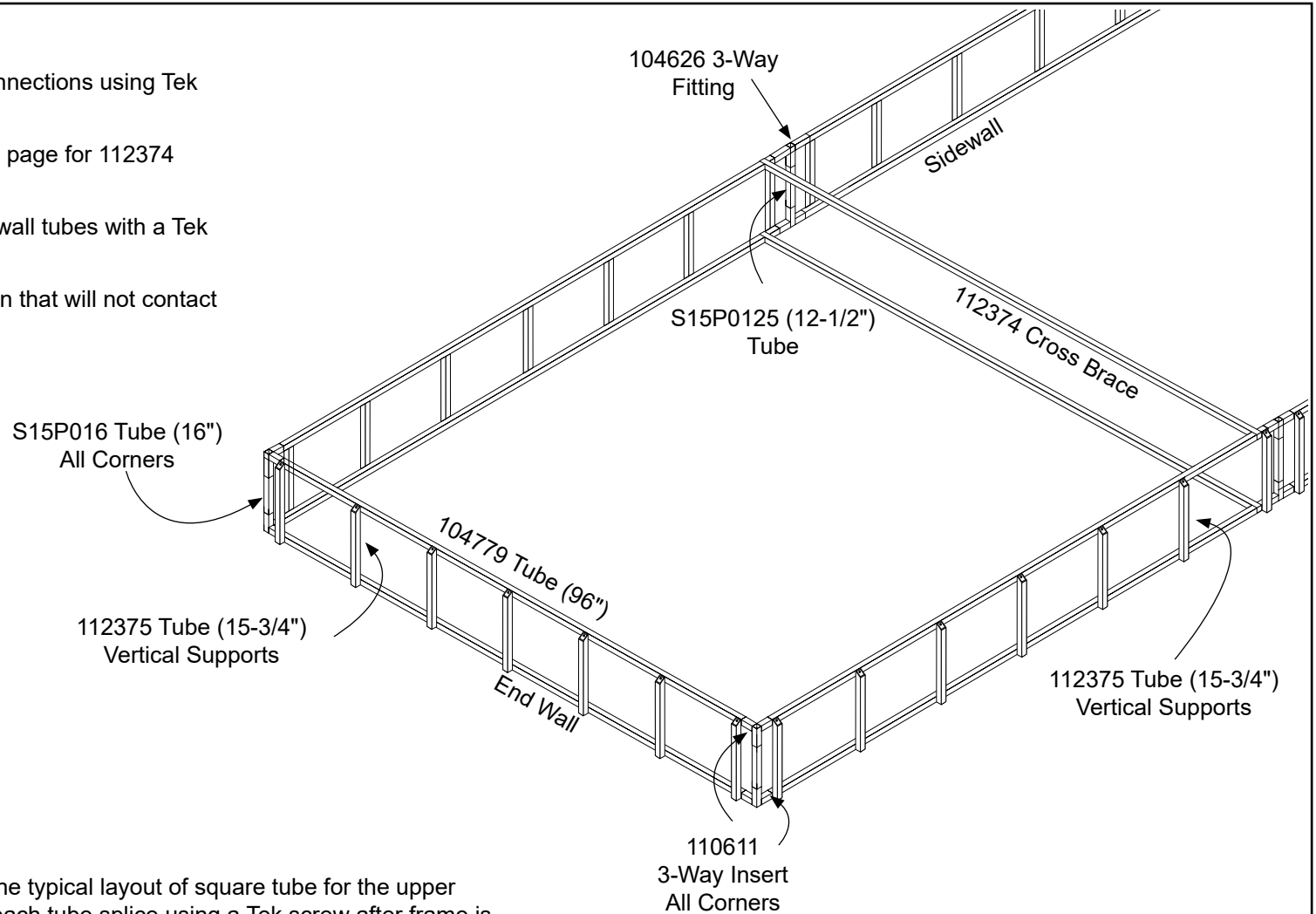


*Not to scale.

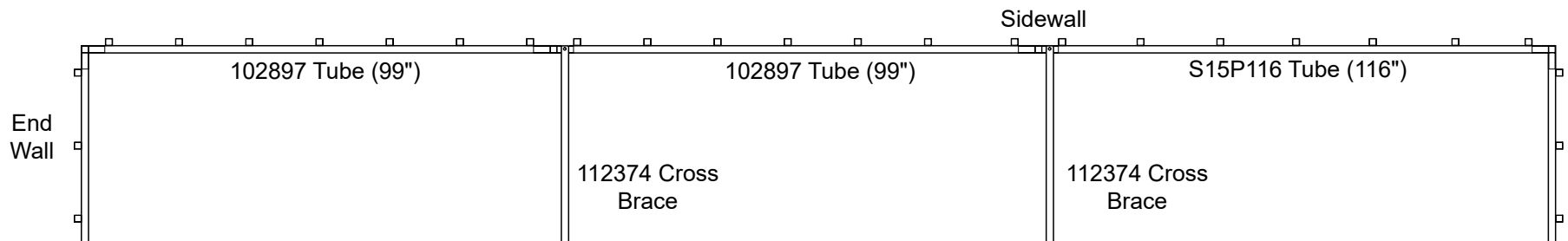
113008 Frame Dimension Diagram - 25' x 8' Float Bed

ASSEMBLY NOTES:

- Secure all tube and fitting connections using Tek screws.
- Refer to diagram on previous page for 112374 cross brace positions.
- Secure splices between sidewall tubes with a Tek screw.
- Install Tek screws in a position that will not contact bed liner when it is installed.



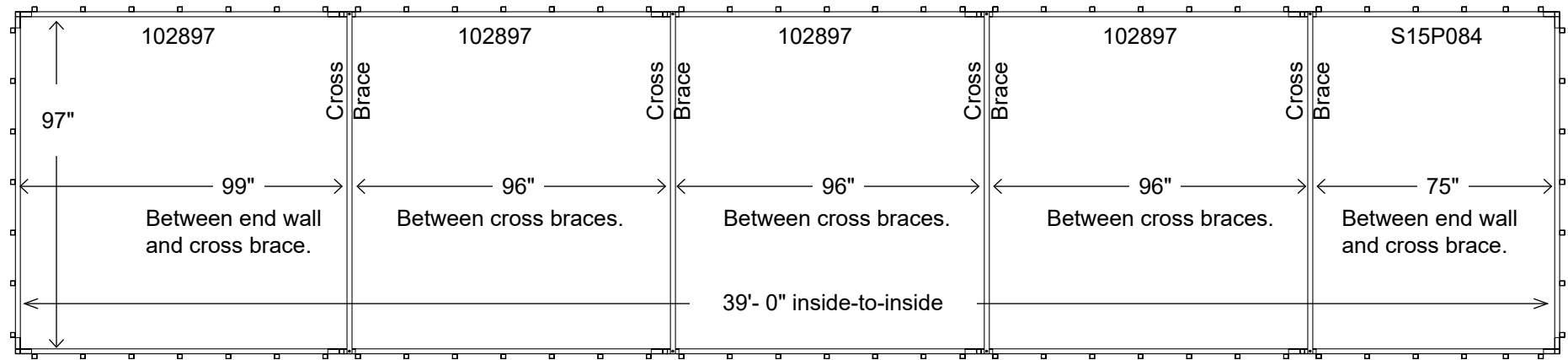
Top View diagram below shows the typical layout of square tube for the upper and lower sidewall rails. Secure each tube splice using a Tek screw after frame is assembled. Install screws in a location that will not contact bed liner.



*Not to scale.

113009 Frame Dimension Diagram - 39' x 8' Float Bed

TOP VIEW OF FLOAT BED FRAME



ATTENTION: Dimensions from inside end wall-to-inside end wall is 468" (39'). Position 1-1/2" wide cross braces as shown to allow for 4' x 8' raft installation. Dimensions anticipate raft installation to be between the cross braces when water level is to the bottom of those braces. If additional space is needed for lettuce rafts, lower the water level so raft edges slide under the cross braces. An additional 6" is also included in the inside-to-inside float bed dimension to account for the inlet and outlet 2" pvc pipe at the pump and mineralization tank(s).

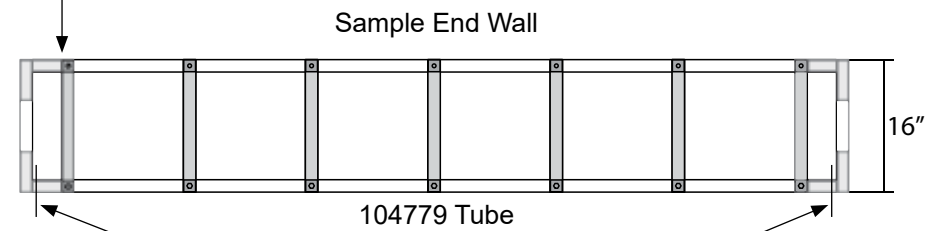
ASSEMBLY NOTE: During the assembly of the frame, take note of the inside dimensions. Some tube assemblies do not need seated tightly in the corner fittings.

For example, you must allow at least 1/2" to remain between the tube end and the corner fitting to achieve the 97" inside-to-inside dimension. Seating the 96" tube tight to the inside of the corner fitting will result in a dimension that is too narrow to accept the lettuce rafts.

When setting inside dimensions always evenly divide the space between the couplers. At least 2" of any tube must remain within a coupler, fitting, or other tube.

Secure all tube connections and joints using Tek screws positioned on the outside of the frame.

Install vertical tube tight against the 3-way corner insert.



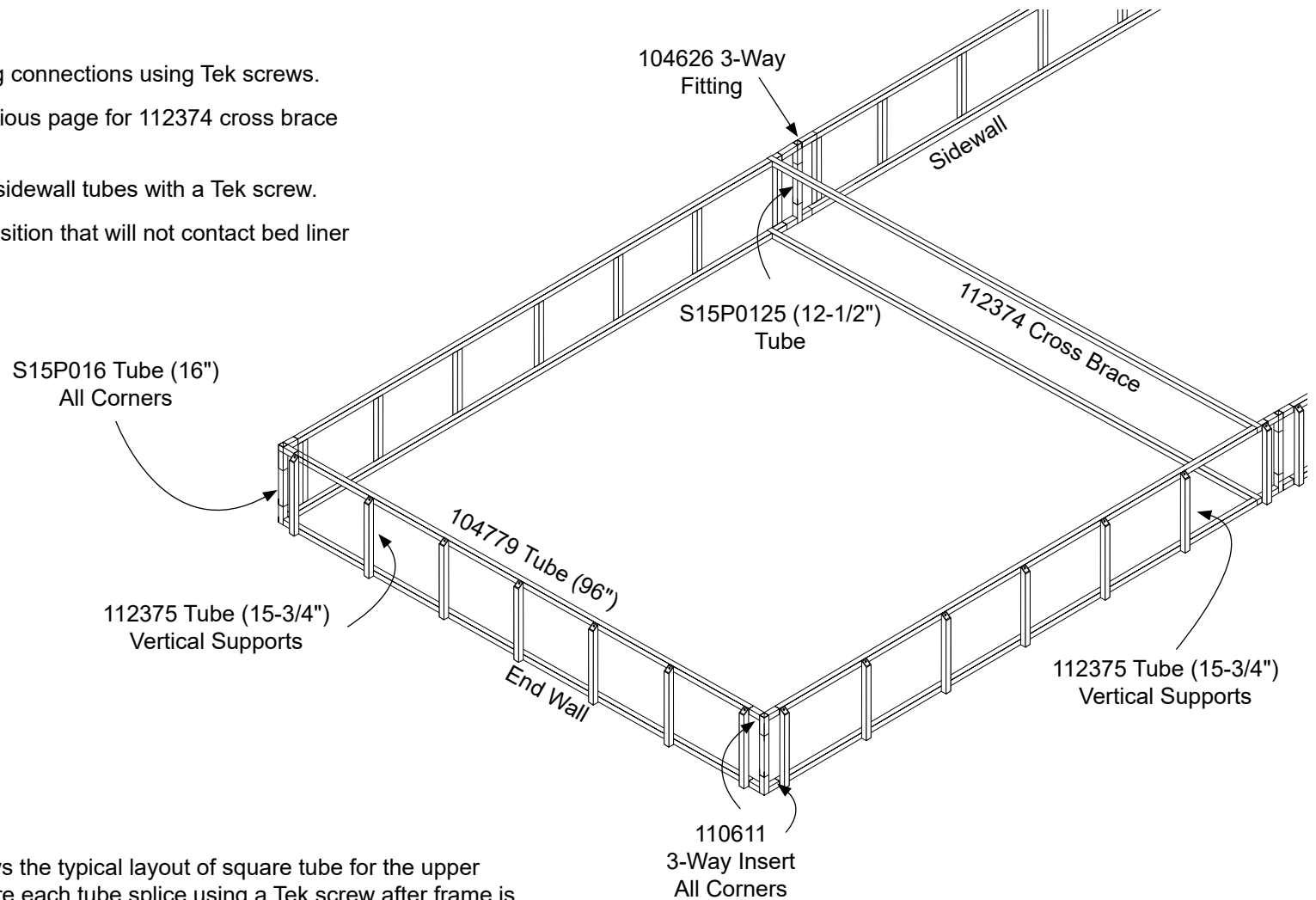
End of 104779 tube is 1/2" from being fully seated in fitting.

*Not to scale.

113009 Frame Dimension Diagram - 39' x 8' Float Bed

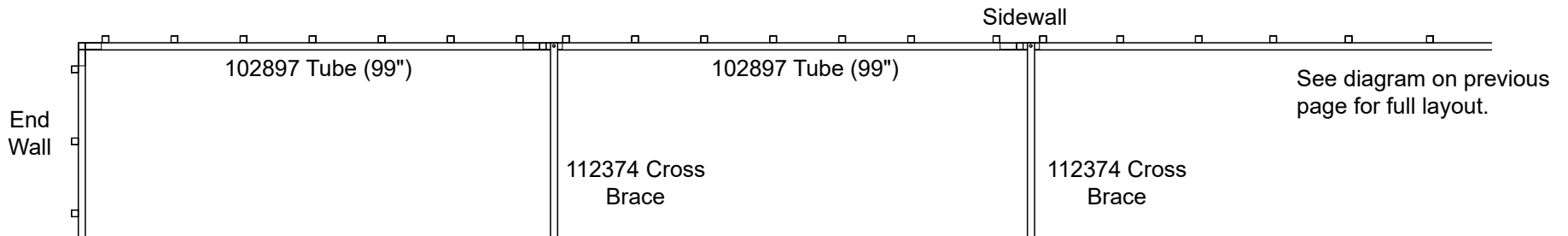
ASSEMBLY NOTES:

- Secure all tube and fitting connections using Tek screws.
- Refer to diagram on previous page for 112374 cross brace positions.
- Secure splices between sidewall tubes with a Tek screw.
- Install Tek screws in a position that will not contact bed liner when it is installed.

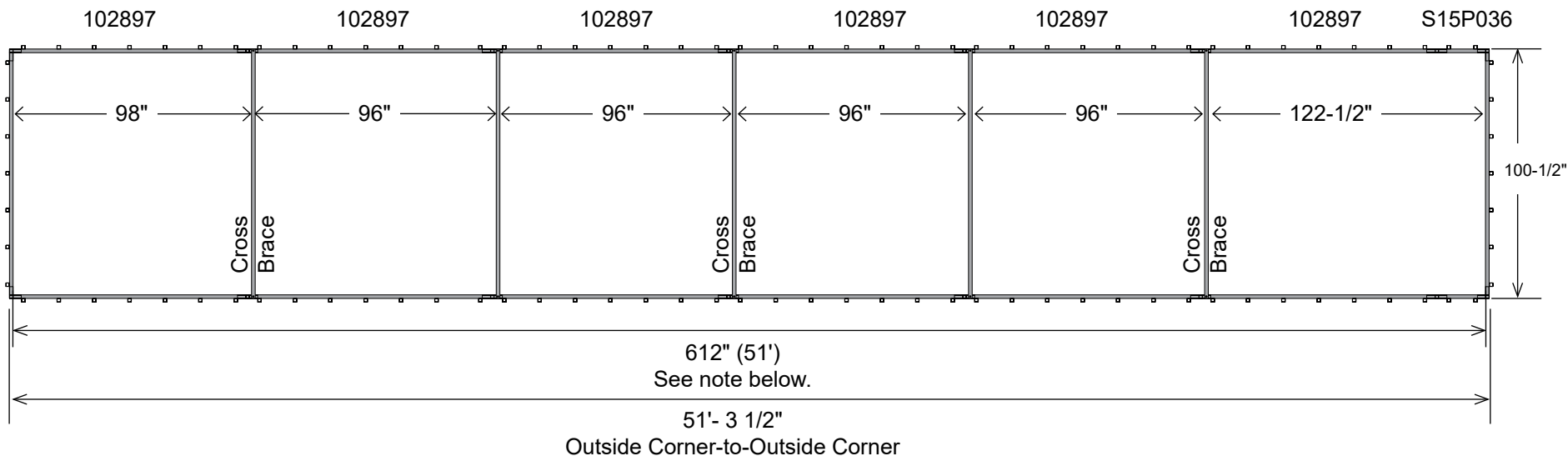


Top View diagram below shows the typical layout of square tube for the upper and lower sidewall rails. Secure each tube splice using a Tek screw after frame is assembled. Install screws in a location that will not contact bed liner.

*Not to scale.



113010 Frame Dimension Diagram - 51' x 8' Float Bed



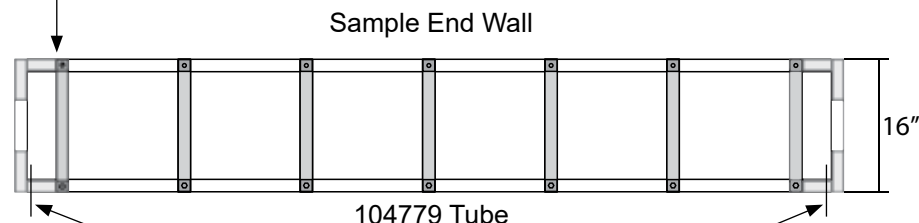
ATTENTION: Dimensions from inside end wall-to-inside end wall is 612" (51'). Position cross braces as shown to allow for 4' x 8' raft installation. Dimensions anticipate raft installation to be between the cross braces when water level is to the bottom of those braces. If additional space is needed for lettuce rafts, lower the water level so rafts slide under the cross braces. An additional 4-1/2" is also included in the inside-to-inside float bed dimension to account for the inlet and outlet 2" pvc pipe at the pump and mineralization tank(s).

ASSEMBLY NOTE: During the assembly of the frame, take note of the inside dimensions. Some tube assemblies do not need seated tightly in the corner fittings.

For example, you must allow at least 1/2" to remain between the tube end and the corner fitting to achieve the 97" inside-to-inside dimension. Seating the 96" tube tight to the inside of the corner fitting will result in a dimension that is too narrow to accept the 96" lettuce rafts.

When setting inside dimensions always evenly divide the space between the couplers. At least 2" of any tube must remain within a coupler, fitting, or other tube.

Install vertical tube tight against the 3-way corner insert.



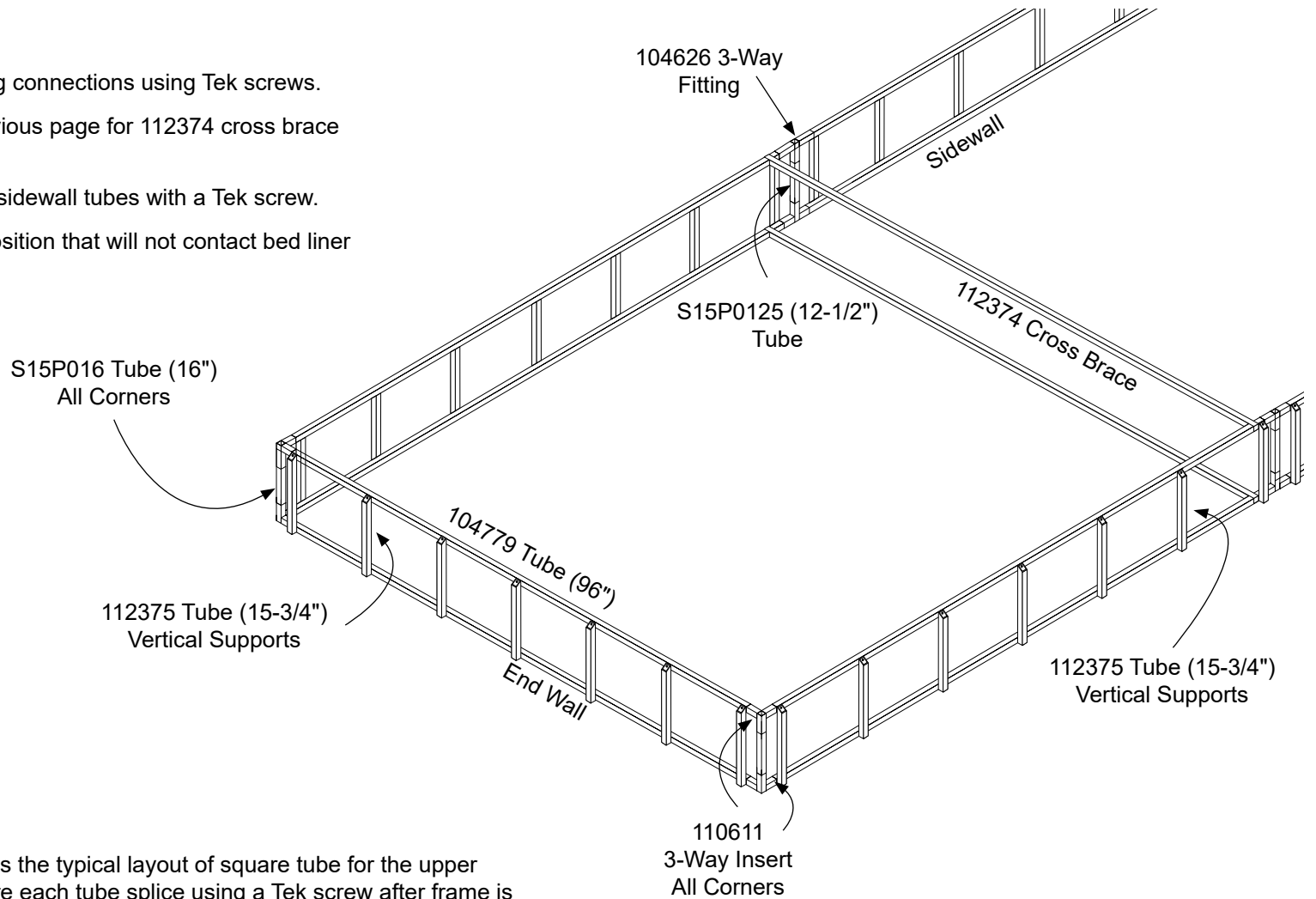
End of 104779 tube is 1/2" from being fully seated in fitting.

*Not to scale.

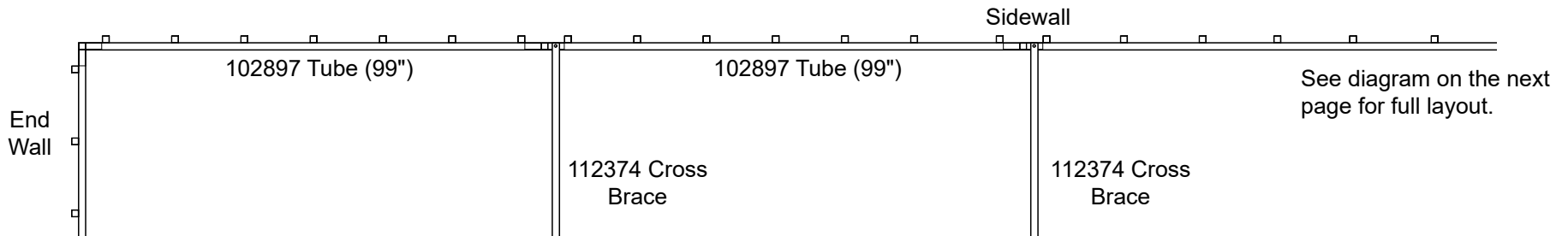
113010 Frame Dimension Diagram - 51'x 8' Float Bed

ASSEMBLY NOTES:

- Secure all tube and fitting connections using Tek screws.
- Refer to diagram on previous page for 112374 cross brace positions.
- Secure splices between sidewall tubes with a Tek screw.
- Install Tek screws in a position that will not contact bed liner when it is installed.



Top View diagram below shows the typical layout of square tube for the upper and lower sidewall rails. Secure each tube splice using a Tek screw after frame is assembled. Install screws in a location that will not contact bed liner.



*Not to scale.