# 26’ GROWING DOME FOUNDATION WALL CONSTRUCTION

## MATERIALS LIST

The foundation wall kit consists of the following:

“B” sections: (1 set of top and bottom “B” plates will be drilled and marked for the door. Instead of holes in the center, it will have two sets of pre-drilled holes the width of the door. See “Nail & Screw Patterns - Step 3” Diagram 3-D2 for nail patterns.)

- 5 top plates (douglas fir, treated with non-toxic wood preservative, double blue stripe, marked “T”)
- 5 bottom plates (pressure-treated lumber or redwood, double blue stripe, marked ”B”)

“C” sections:

- 10 top plates (douglas fir, treated with non-toxic wood preservative, double green stripe, marked “T”)
- 10 bottom plates (pressure-treated lumber or redwood, double green stripe, marked ”C”)

All top and bottom plates have a 12º angle cut on each end and are pre-drilled ready for nailing

Other items included in kit:

- 46 - upright studs (pressure-treated lumber)
- 8 - “B” half pieces of exterior siding
- 10 - “C” pieces of exterior siding
- 2 - narrow pieces of exterior siding used on door section (attached after door is installed)
- 30 - 3/8” x 3-1/2” carriage bolts, nuts and washers (wall section to wall section)
- 16-penny galvanized nails (top and bottom wall plates to studs)
- 1-1/4” star drive ss screws (siding) (T-20 driver bit included in kit)

## WALL SECTION FRAMING

You will need:

- 1 “B” door section (top plates, bottom plates, and studs)
- 4 “B” sections (top plates, bottom plates, studs, and siding material)
- 10 “C” sections (top plates, bottom plates, studs, and siding material)

Start by assembling the “C” sections:

When choosing how to arrange the plates, we suggest you make sure the side of the lumber that contains the heartwood (reddish color) as opposed to the sapwood (or bark side) is placed so that it sits on the outside of the wall section. The sapwood will end up inside the cavity of the wall and will improve the longevity of the structure.

Using 16-penny nails, attach one upright stud at each end of a top plate and one at the center. Holes in the plates are pre-drilled to nail through. Make sure the outer edge of the stud is lined up with the angle on the plate and the inner corner is projecting (on the short length of the plate), not the outer corner. See “Foundation Wall Assembly” Diagram 3-D1. When building the wall sections, make absolutely sure that the end studs are flush with the cut angled end of the top and bottom plates. If the stud edge projects beyond the cut end of the plate, it alters the radius of the foundation wall and thus alters the way the Growing Dome® structure sits on the foundation wall. To ensure the plates stay aligned when nailing, it is helpful to sit on the frame (like a horse) when nailing them together. See “Foundation Wall Construction” Video 3-V1. Turn the plate over and attach the bottom plate with nails through the pre-drilled holes.

After the 10 “C” sections are framed, go on to the “B” sections, remembering that one of the 5 “B” sections will be used for the door section.

In the door section of the foundation wall there are 4 studs used. The door section requires 2 center studs (where pre-drilled) and uses two short pieces of siding material. Nail the studs thru the pre-drilled holes, making sure the

inside of these 2 center studs measures exactly 41” apart (20-1/2” on either side of centerline). The center studs mark the outside of the door opening. (The short pieces of siding provided in the kit are attached after the door is installed. Do not attach these at this stage.)

## WALL SECTION SIDING

Lay one of the framed “C” wall sections flat (short side of the top and bottom plates down) and place a piece of exterior siding on the frame centering it from side to side. Make sure the wall section is square by first attaching the factory cut end of the siding with 1-1/4” star drive screws, then keeping the side edges of the siding flush with the side edges of the wall frame, attach the other end with star drive screws. Review “Foundation Wall Construction” Video 3-V1. Finish by fixing screws in the center and end studs and extra screws spaced equally on the top and bottom edges. See “Nail & Screw Patterns - Step 3” Diagram 3-D2 for screw layouts. Do not over tighten or the bit can break or bend.

The 10 “C” sections use full-length siding, but on the 26’ Growing Dome, the “B” wall sections of siding come in two pieces. This is to optimize the efficient use of siding material and minimize waste. We provide a metal trim strip to cover the joint between the two pieces of the siding. Complete the 4 “B” wall sections in the same manner as the “C” sections.

## ASSEMBLING THE FOUNDATION WALL

Now it is time to assemble the wall sections on your foundation. (If you are using the Growing Spaces foundation wall on an ICF/Concrete foundation, we recommend that sill seal be placed in between the bottom plates of the foundation wall and the ICF or concrete foundation. This is considered an owner supplied item. Cut into strips, match the pattern of the bottom plates, and use a few staples to hold it in place on the underside of the bottom plates as you assemble the wall sections.) Start at the North Point of the Growing Dome by putting 2 “C” sections together on either side of this point. The wall sections are fixed in the order “C”, “C”, “B”, “C”, “C”, “B”, etc., all the way around the Growing Dome. The door always goes through a “B” section. You have 3 choices for its location, as the northerly 2 “B” sections are where the above ground pond goes.

Match the exterior joints of the wall with the line from the center stake to the 15 stakes or marks designating the Growing Dome layout. You may need to lean the stakes out to place the wall sections but be sure that the line of intersection does not stray more than an inch or two from the layout points.

Next, you need to bolt the wall sections together through the end studs with two 3/8” x 3-1/2” carriage bolts provided. See “Joining the Wall Sections” Video 3-V2. Clamp or screw two wall sections together with the tops level and the inner edges of the wall sections flush at the top and bottom while you drill two 3/8” holes approximately 4” from the top and bottom of the studs and about 1” from the inside of the dome edge of the studs. Insert bolts through the holes and use a hammer to sink the head of the carriage bolt into the wood so that it does not twist when it is tightened. Put washers under the nuts and tighten snugly. It is important when fixing the wall sections together that the tops be level, aligned, and that the tops of the wall accurately come together. If a wall section is buckled or warped in any way and the bottom does not quite line up, this is not a problem. Continue until all wall sections are in place and bolted together. When you have tightened all the bolts, check to make sure the wall corners are all still the same distance from the center stake and the wall is still level and evenly supported by the firmly compacted gravel base or sitting level on your concrete piers, ICF, or concrete foundation.

***2nd IMPORTANT ASPECT:***

*Double check the ‘roundness’ and level of the installed foundation wall as stakes can sometimes “shift” out of position while the wall sections are being installed. This can be done easily. Simply re-measure from the center stake to the outside corners of all the wall sections. Nudge wall sections in or out until all dimensions are consistent.*

*If the center stake has been removed, or no longer seems accurate, you can also check ‘roundness’ by measuring the distance from each corner point to the center of the opposite wall section and then nudge wall sections in or out until all dimensions are consistent.*