



# 26' GROWING DOME LAYING OUT YOUR DOME For ICF Foundation

## LAYING OUT YOUR DOME

You should now have a flat and level site about 3 feet larger than the diameter of your Growing Dome® and you have verified that there are no underground utilities in the area where you will be digging for the ICF trench. You are now ready to layout the dome foundation. You can choose between two options, depending on whether you are going to do the prep work before or after you receive the dome kit.

**OPTION 1:** Use this option if you are going to layout the foundation after you have taken delivery of the dome. You will use the pressure treated bottom plates (you or your installers may also use completed wall sections) and will also need the owner supplied rebar stakes, some small stakes, or spray paint to mark the corners after layout.

Place a stake in the center of your Growing Dome site, making sure it is firmly set in place and plumb (and the top doesn't "wobble") to ensure accuracy of your layout dimensions. **Make sure the center stake is not disturbed until the foundation wall is completely anchored to the foundation and the dome structure is anchored to the top of the foundation wall.** Procure a large washer that will fit over the center stake, and from the washer, stretch a radius of linen twine (which is non-stretching) or wire toward the true north (not magnetic north) point of the Growing Dome. Mark this point first. The radius for the 26' Growing Dome using an ICF foundation is 12' 10-1/2". Insert a rebar stake at the north point and verify that the distance from the middle of the center stake to the inside edge of the north stake is in fact 12' 10-1/2".

Starting from the north point, place a "C" bottom plate or wall section on either side of the stake, with the mitered ends flush with each other and meeting at the inside edge of the stake, in the center. On either side of the "C" bottom plate or wall sections place a "B" bottom plate or wall section.

Now working from just one side, place 2 "C" sections followed by a "B" until you've gone full circle back to the other side. See "Layout for ICF Foundation" Diagram 2c-D1 for visual of this pattern. Make fine adjustments to the mitered edges so that all gaps are equal. Using the radius wire, verify that the outside edge where the corners meet is 12' 10-1/2" all around the dome. Adjust the corners as needed, but in this option, it is not as critical to be perfect. Within a half inch either way is acceptable. Using the owner supplied rebar stakes, mark the corners (points) of the dome where the wall sections will meet. When all corners have been marked, collect the bottom plates and set aside to be used to construct the foundation wall sections.

**OPTION 2:** Use this option if you need to layout the foundation before you have taken delivery of the dome. You will need stakes and spray paint to mark the diameter of the dome. It is not as accurate as the first option but will work if you need to get started before the dome kit arrives.

Place a stake in the center of your Growing Dome site, making sure it is firmly set in place and plumb (and the top doesn't wobble) to ensure accuracy of your layout dimensions. **Make sure the center stake is not disturbed until the foundation wall is completely anchored to the foundation and the dome structure is anchored to the top of the foundation wall.** Procure a large washer that will fit over the center stake, and from the washer, stretch a radius of linen twine (which is non-stretching) or wire toward the true north (not magnetic north) point of the Growing Dome. Mark this point first. The radius for the 26' Growing Dome using an ICF foundation is 12' 10-1/2". Insert a rebar stake at the north point and verify that the distance from the middle of the center stake to the inside edge of the north stake is in fact 12' 10-1/2". Using a stake or spray paint, mark this distance from the north point all the way around and back to the north point. This will indicate the point where all the outside corners of the wall sections will be placed.

The 26' dome has 15 sides and 15 corners or points. There are 5 "B" wall sections and 10 "C" wall sections. For the circumference you are going to use 2 more shorter wires or a measuring tape to measure out 5' 3-1/4" (63-1/4") for the "B" sections and 5' 4-3/4" (64-3/4") for the "C" sections. Make sure the wire or measurement

considers the diameter of the stakes, as the measurement is taken from actual center of the stake, and small errors add up quickly. *Do not be overly upset if the layout does not come out exact the first time.* It is important to understand that when you are doing the layout, the points that you are measuring to are the outside corners of the foundation wall of the Growing Dome.

Once you have a stake at the north point, it is time to begin working around the circumference of the dome. Remove the radius wire from the north point stake but keep it on the center stake. Loop the “C” length wire (the “C” strut wire) over the north point (1st stake). Where the radius wire and the “C” strut wire meet is the next point or corner of the Growing Dome. With both wires stretched tight, place another stake at this point. (This can also be done with a tape measure.) For the next stake position, use the “B” length wire (the “B” strut wire). Continue to layout the succeeding points following a “C”, “B”, “C” pattern using the appropriate wires as shown on the “Layout for ICF Foundation” Diagram 2c-D1 until you’ve gone halfway around.

- Continue to layout the succeeding points until you’ve gone halfway around.
- After you have positioned the 8th stake, it is time to check for layout accuracy.
- Mark the center of the strut wire as it stretches between the 7th and 8th stakes.
- Stretch a line from the north point stake through the center point so that it intersects the strut wire.
- If it cuts this strut wire in half within 1” either way, you are within tolerance. Continue around back to the north point stake.
- If the layout doesn’t reach the expected position, then either:
  - The radius wire is too long or
  - The strut wire is too short.
- Divide the error in inches by 7 to get a length (i.e. for an error of 3-1/2” = 1/2”), which we call the adjustment length, and add this length to the strut wire.
- If the layout goes past the expected position, then either:
  - The radius wire is too short or
  - The strut wire is too long.
- Divide the error in inches by 7 and subtract this adjustment length from the strut wire.
- Go back and readjust the stakes already installed until you arrive at the correct layout at the halfway point between the 7th and 8th stakes.
- Continue to the north point with this readjusted strut wire length. You should end up within an inch or two of the north point stake. If not, use the above procedure, but divide by 14 instead of 7.

Once you have all the stakes in place, and verified accuracy, continue on to “Using Insulated Concrete Forms” Written Instructions 2c-W2 for additional information when using insulated concrete forms.

**Congratulations! You have just successfully laid out the basics of your  
Growing Dome ICF Foundation.**

**If an ICF or Concrete wall is being used with an ICF foundation, contact Growing Spaces  
for details on the ICF/Concrete Wall Package before purchasing any owner supplied items.**