16 - 1136

Sonja Birr

From: Chad Scheinoha
Sent: Thursday, November 10, 2016 4:41 PM
To: Sonja Birr; Amber Daugs (amberdaugs@yahoo.com)
Cc: Dan Koski
Subject: FW: Grow It Forward Hoop House
Attachments: Hoop House Training Guide.pdf

Sonja,

This will need to go to PI Committee in December. See Ambers request below. The current agreement states that any new additions to the S 14th Street Garden site need to be approved by the Parks Division Manager Chad Scheinoha and if I determine that they need committee or council approval I will get them there. I am not comfortable solely approving hoop houses at the site. I will support them, but want committee to make the final decision. I talked to Rick as well and he has given them the green light for the hoop houses also, with a condition of having appropriate exits and lighting.

Amber,

I have not talked to you on this and wasn't sure if Rick contacted you after I talked to him? I wanted to be sure that you are ready for this to go to committee in December and if not, we won't put it on the agenda. As far as Rick (Building Inspection) and me (Parks) are concerned, we will be recommending approval.

Chad J. Scheinoha
City of Manitowoc, Dept. of Public Infrastructure
(Park, Cemetery, Lift Bridge and Electrical Operations)
Mobile (920)374-0402
Office (920)686-6512
www.manitowoc.org

From: Rick Schwarz
Sent: Thursday, November 10, 2016 3:06 PM
To: Chad Scheinoha
Subject: FW: Grow It Forward Hoop House

Hi Chad,

Let me know what transpires on your end with committee mtgs. Thanks

Richard Schwarz
Building Inspector
900 Quay St.
City of Manitowoc
www.manitowoc.org
920 686-6940

From: Grow It Forward [mailto:growitforward.wi@gmail.com]
Sent: Friday, October 28, 2016 4:05 PM
To: Rick Schwarz
Subject: Grow It Forward Hoop House

Hello Rick,

I am starting this process here, to receive your blessing in constructing hoop house(s) at the community garden on S.14th Street. Hoop house(s) would be located behind the fenced in area on the southwest side of the property. Afterward, I would then be going to the City to amend our agreement.

Since I would be contracting the farmer and organization known quite well for urban agriculture throughout the nation, Will Allen and Growing Power, to help construct the hoop house(s), I thought I would attach a training document from a course I took with them so you may get an idea of how they are built.

Anyway, I am wanting the hoop houses for 3 reasons, 1) to provide additional learning opportunities for youth in our community, 2) to grow more food longer--earlier and later in the season, 3) to provide local food for our "farm to school" program.

In Sheboygan Falls, 25% of their high school students are involved in growing on a 1/3 acre 'farm' (a 20 ft. x 50 ft. hot house, and a 72 ft. x 30 ft. high tunnel greenhouse) and raise over 1,200 pounds of tomatoes, hundreds of pounds of cucumbers, peppers, carrots, kohlrabi, lettuce, garlic, and herbs...which is all filtered back into the kids lunchroom.

Grow It Forward recently received a request from Chartwells to help grow food with youth from the schools to show up in the lunch rooms....but this dream can not be a reality unless we grow the way Will Allen does in Milwaukee.

But, in the meantime, I am wanting to write for a grant to have these installed, and this grant would be used as a match for a different grant....so, I'm not exactly sure what other information you may need in order for us to receive your blessing, to then go to Council to amend our agreement.

Any attention to this matter would be greatly appreciated, thank you!

Amber L. Daugs
President, CEO, Founder
Grow It Forward Inc.
108 Riverview Drive
Manitowoc, WI 54220
920.645.9467
growitforward.wi@gmail.com
grow-it-forward.org

GROWING POWER INC.

20' x 48' Greenhouse

Learn how to build a hoop greenhouse using innovative and economical construction methods.

I. Location: Determine the area for your greenhouse; the ground space should be as flat as possible. The length of the greenhouse should be run east to west.

- Contact Diggers Hot Line at their national number (800) 242-8511 prior to construction, as your anchor post will be 3 feet below the ground surface.

II. Building A Hoop Bending Jig: This process requires:

- 4' x 8'x 5/8" sheet of plywood
- 3" screws
- 1 5/8" screws
- 4 lath
- Marker
- Pencil
- Table
- 1 Drill Bit & #2 Square Bit
- 14 to 16 scrap - 2" x 4" cut @ 1' in length
- 2 - 2" x 4" cut @ 8' in length
- Tape measure

III. Pipe Bending: This process requires:

- 20 – 1 3/8" @ 21' in length
  - Cut 7 @ 10 ½'
- Connect 13 – 10 ½' pipe to 13 – 21' pipe sections using ¾" x 1" self- tapping screws. You will start with 13 pipes @ 28 ½"

IV. Square Building:

- Precut 1 5/8" anchor pipe at 6' – you will need to cut 26

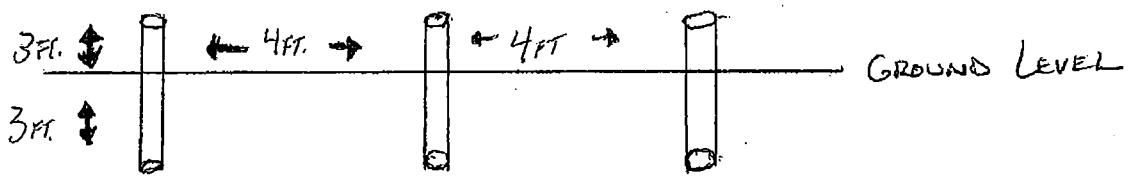
i. Using the 3, 4, 5 rule, square the site and place the four anchor corner post

Note: set post 3' below ground surface or below frost line in your site area.

- Stretch carpenters line length way on end wall post.
- Mark 4' center from end post to end post, eventually you will have 11 post marks on each side.

Note: Establish one side completely, then match your 4' spacing on the opposite side.

V. Setting Anchor Pipe @ 4' Center and 3' Below Ground Surface



VI. Base Boards and End Wall Frame

- 20 – 2" x 10" cut @ 12' in length
- 28 – 2" x 4" cut @ 12' in length

VII. Place Hoops and Purlins

- 13 Hoops
- 7 - 1 3/8" pipe @ 21' in length
- 39 Cross Connector Couplers
- 39 Cross Connector Wedges
- 2" Self-tapping screws
- 1" x ¾" self-tapping screws
- Gussetts

Any questions, comments or concerns can be directed: Wilbert St. Julian JR. e: wcsaint@att.net p: 414.731.8409

20' x 48' Greenhouse Material List

Item	Qty	Unit Cost	Total Item Cost
For the Hoops and Anchor Posts:			
21' pieces of 1 3/8" (sometimes this dimension is given as 1.315")"toprail" for residential chain link fence	**30**		
24' 1 5/8" "line posts" for residential chain link fence	**7 linear ft**		
Lumber			
2"x 10" x 12'	**20**		
2" x 4" x 12'	**44**		
1 / 2" thick plywood (4'x8')	**6 sheets**		
Wood Lathe (1/4" thick, usually comes in bundles of 4' pieces)	**200 linear ft (2 bundles)**		
Hardware			
Duct Tape	**2 Rolls**		
3 /4" x 1" Self – Tapping Screws	**1#**		
3" Deck Screws	**1#**		
1 1/4" Deck Screws	**5#**		
#10, 3/4" hex washer self-drilling sheet metal screws	**1 pkg**		
Perforated Metal Strap (pipe strap)	**200 linear ft**		
2" Self – Tapping Screws	**1#**		
4" Hinges	**16**		
Greenhouse Supply (Note: it can be difficult to find the film and cross-connectors at Home Depot, Lowes, etc. Instead, look for a greenhouse supply store in your area)			
32' x 100' Roll 6 Mil Polyethylene Film (for a double layer), UV protection and anti-condensate recommended	**1**		
1.315" cross-connectors & wedges (to connect two perpendicular pieces of 1.315" pipe)	**40 each**		
Aluminum Storm Doors or Greenhouse Doors (new or used, check thrift stores or Habitat for Humanity Re-Store)	**2**		
Tools (these don't necessarily need to be purchased new, ask around to see who has tools to borrow)			
Cordless Drills	**5 or more**		
Drill Bits, Screwdriver Bits	**as needed**		
Circular Saw	**1**		
Reciprocating Saw w/ metal cutting blades	**1**		
Free-Standing Ladders, 5'-8' tall	**2**		
Mason's Line	**1**		
Hammers	**2**		
Sledge Hammer	**1 or 2**		
Level	**at least 1**		
Tape Measures (at least one 100 ft tape)	**2**		
Pencils	**several**		
Extension Cords	**as needed**		
Any other available Hand Tools that might be useful!			

Hoophouse Crew Supply List

- Safety Glasses
- Tool Belt
- 25 ft. Tape Measure
- #2 Square Drill Bits
- 5/16" Hex Drill Bits
- Claw Hammer
- Line Level
- Pocket Level
- Pencils
- Sharpie Markers
- Work Boots (no gym shoes)
- Utility Knife

As of January 2013, these materials are mandatory for all green house building personal. It is also required that safety glasses must be worn at all times during construction.

Signed,

Wilbert St. Julien

Green House Supervisor

THE JIG

You will need:

(1) 8'x4' piece of plywood (will cut length wise)
(2) 2x4x8
scrap 2x4 pieces (10"-12")
(4) lathes
2" deck screws
drill bit
saw

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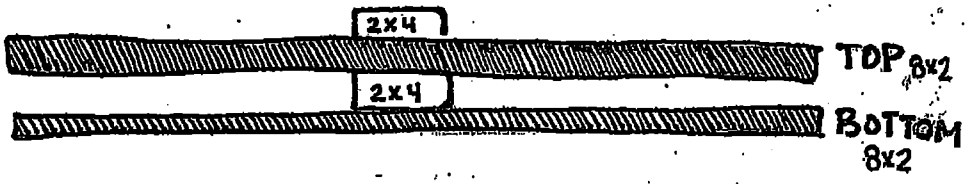
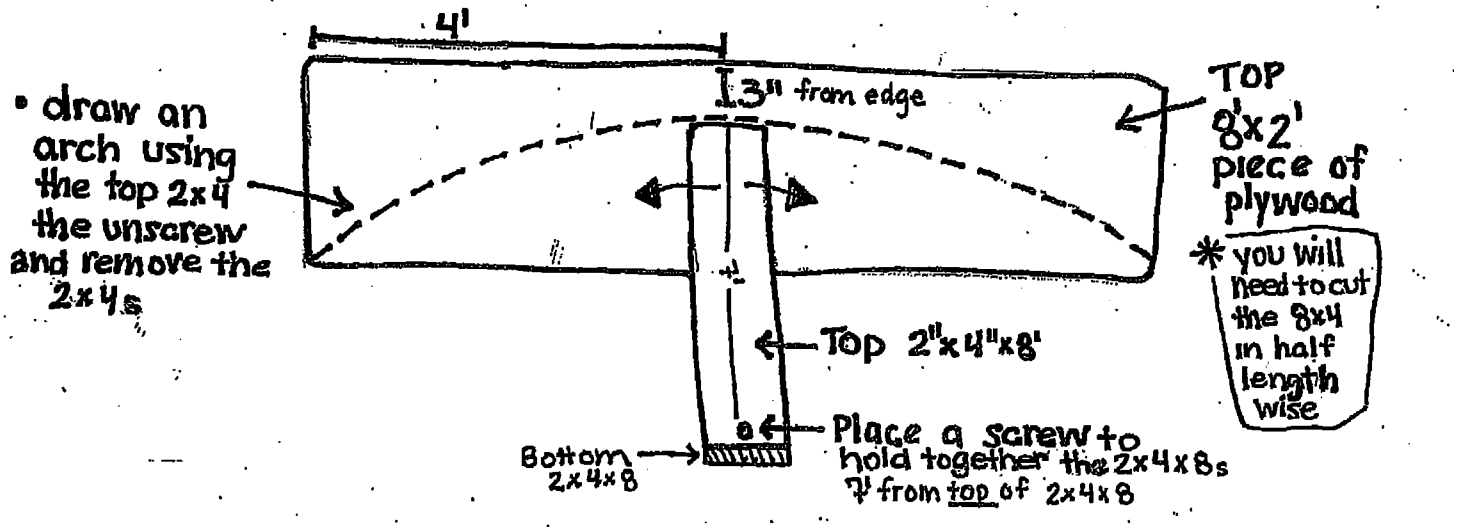
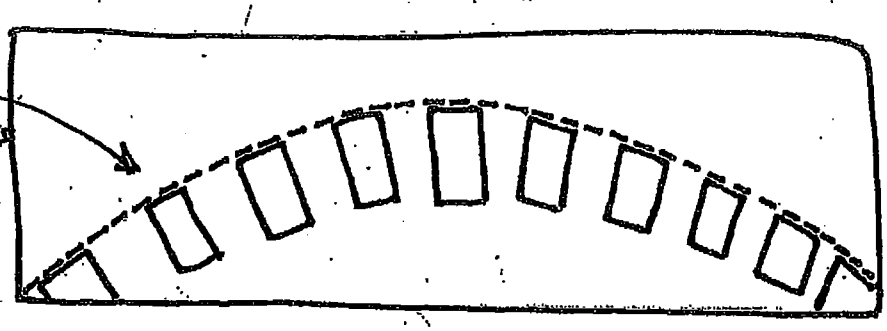
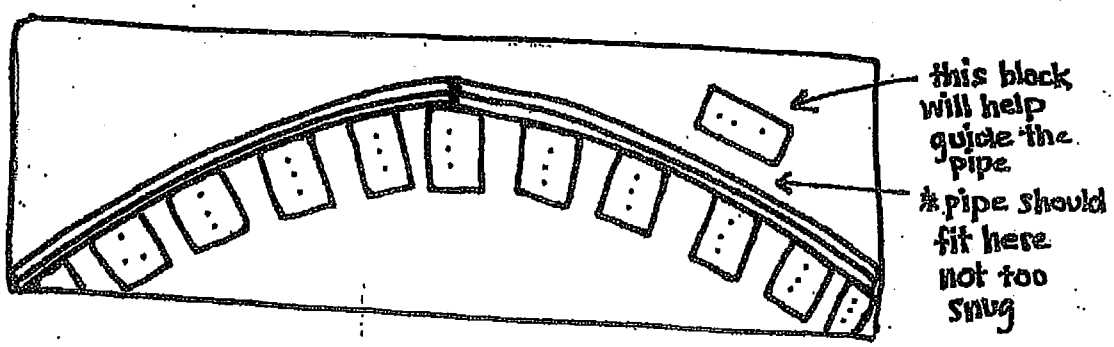




- draw an arch using the top 2x4 the unscrew and remove the 2x4s



- line up blocks on arch
- TRACE the blocks & make guide holes (trace those as well)
- screw on the blocks



- add two layers of lath

The length of wood you use is your choice.

Note: HANDS ON—

- ✓ Secure lumber with gussets and pipe straps to supports.
- ✓ Measure end wall pipes 3 ft up from ground and cut
- ✓ Set End Wall Frame: 12/8ft. 2x4s, and 2/10ft. 2x4s.
- ✓ Prep 2x10x10 lumber for side walls. Note: we double side walls for strength and height.
- ✓ Pipe strap walls to anchor post
- ✓ Set carpenters line at 3 ft height from one corner anchor post to the other corner anchor post.
- ✓ Make the line on each anchor post in between then cut . Run it to the other end to create a cut off line. For your anchor post then cut at line.
- ✓ Place all hoop to height then add self-tapers to connection at anchor post and hoops.
- ✓ First, put in center purlin pipes with cross connectors and wedges at the top of the hoop. Then measure down evenly on both sides and add purlin also with cross connectors. This will also be followed by wood purlin on both sides as well. Using 2x4x8's with gussets plates and pipe straps.
- ✓ You wood purlin's will be set at a 36 inch mark from the top of your wood sidewalls. Place the bottom of the 2x4 at that mark.

Note: HANDS ON—

Prepping for Covering

- ✓ Pre drill lath
- ✓ Duck tape all exposed pipe strap, anchor post and hoop connections. (Any object that may cut plastic needs to be duck taped).
- ✓ Center ladders @ end walls, (we use 2 @ each end).
- ✓ Have cordless drills charged and ready along with 1 & 5/8 screws.
- ✓ Rollout plastic, then find the 2 ends and start passing up to person on ladders. Keep feeding and pulling as if making up a bed.
- ✓ Now that plastic is over all hoops, even sides and ends pulling snug put in a few lath only to secure first layer then repeat with second layer and start from the middle of hoop house working to end walls pulling tight as you move along. This will take several people.

"Rome *was not built in a day, but we can build a 96x20 foot hoop house in two*". **Saint Julian**

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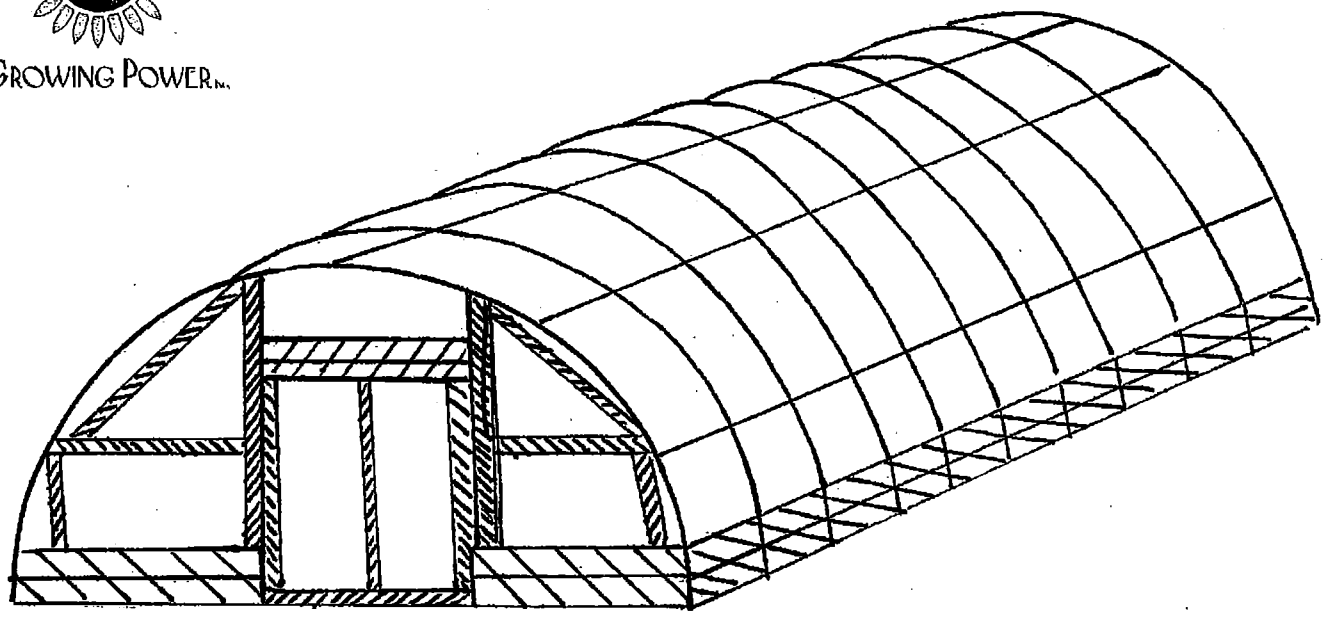

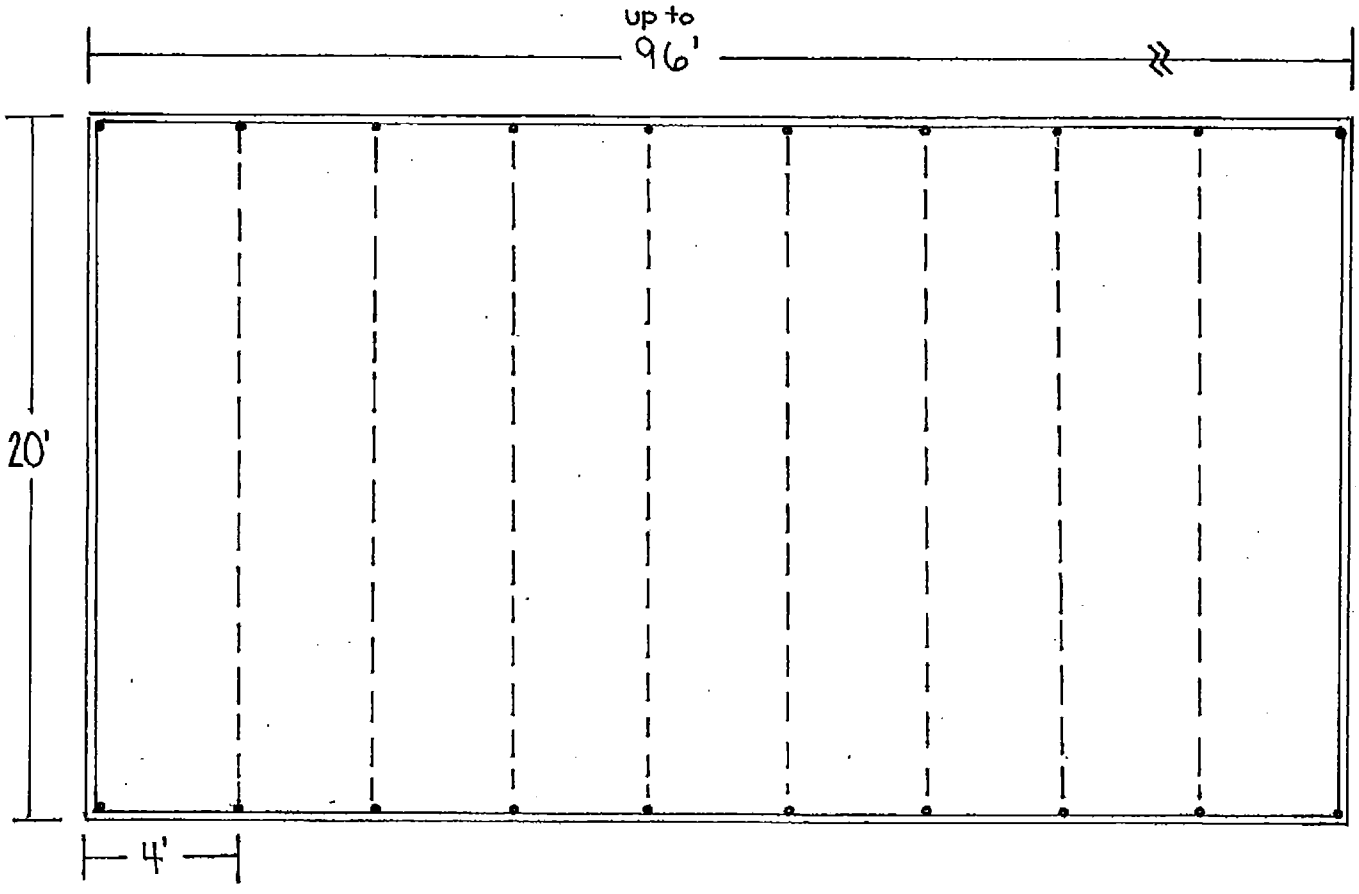

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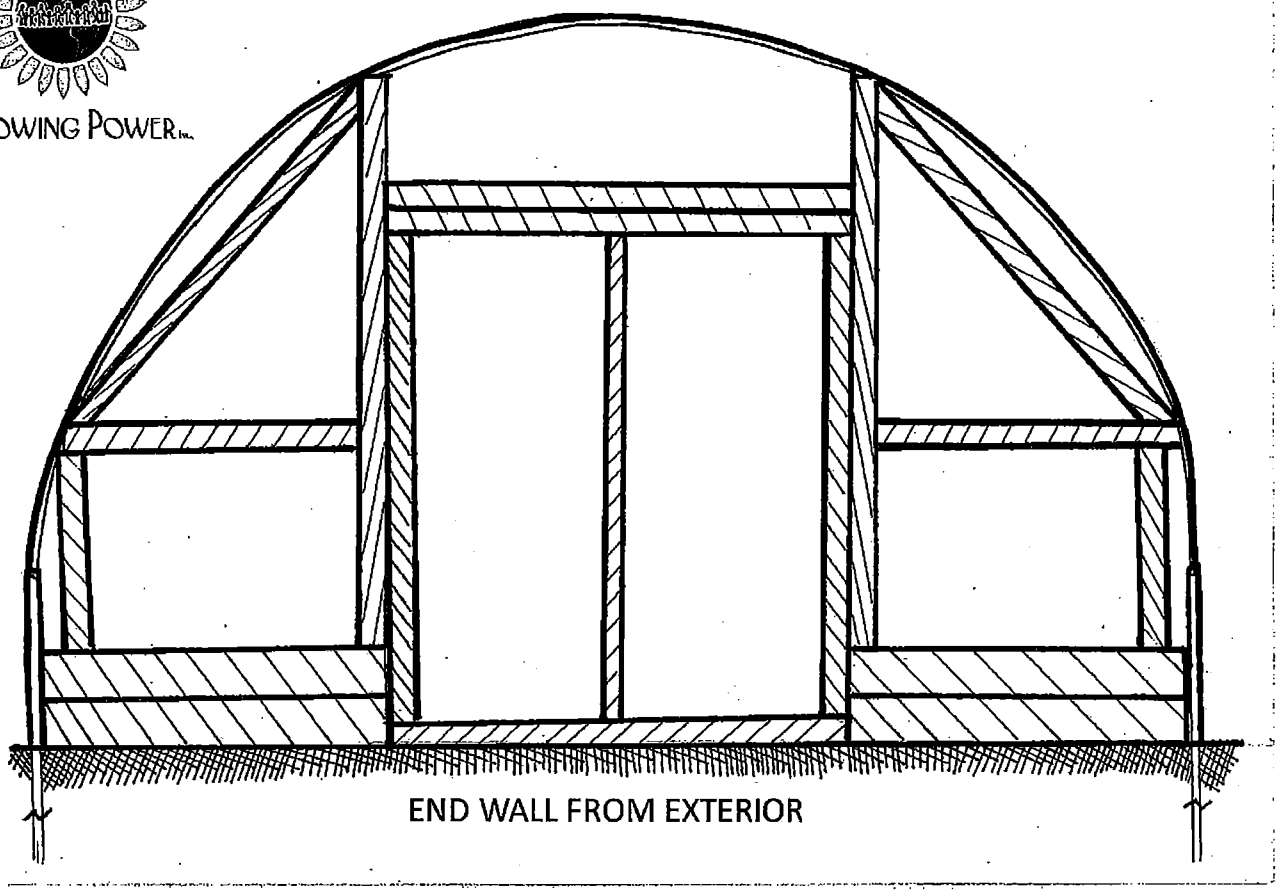
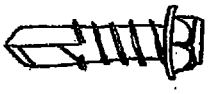
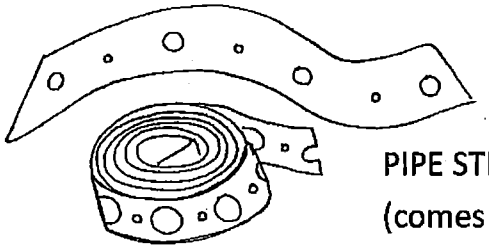


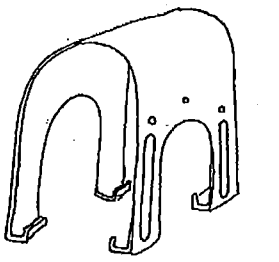
END WALL FROM EXTERIOR

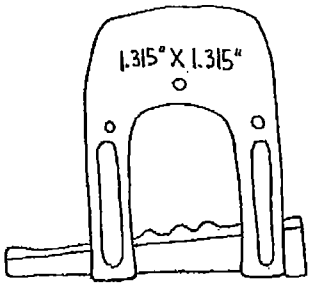


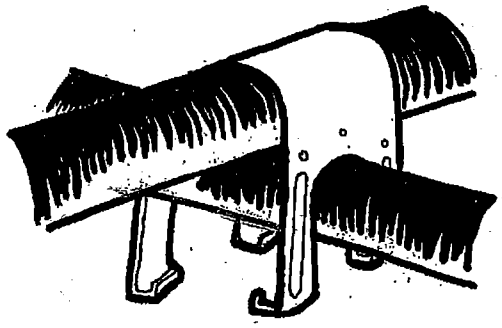
SELF-TAPPING SCREW



PIPE STRAP
(comes in a roll)







CROSS CONNECTOR and WEDGE

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SAINT Construction Team

Hoop House Take

GROWING POWER™

For: _____

Date: _____/_____/_____

____ct. Halco Steel 1.6 (1 5/8) wide anchor posts ***16 gauge**

____ct. 1.6 (1 5/8) wide anchor posts *SS20 gauge

____ct. Halco Steel 1.315 (1 3/8) purlin

____ct. Gator Shield 1.315 (1 3/8) hoops

____ct. 2x10 x12'

____ct. 2x4 x 12'

____ct. Cross connector Wedge

____ct. Cross connector Coupler

____ Perforated Pipe strap (50' per box)

____Lath bundles @200' (50 per bundle, 4' each)

____Greenhouse Film

____Plywood 4'x8' x1/2"

____Hinges

____Duct Tape

____ Washers

____Self Tapping screws

____1 5/8" screws

____3" screws

____Poly Gal

____Rubber Stripping / Weather Stripping

Generator/solar set-up

Gas can

Extension cords

Power strip

Corded drill / Corded sawsall / Corded circ saw

Cordless screw gun
4 & bits/batteries/chargers

Cordless sawsall
2 &blades/batteries/chargers

Cordless circ saw
2 &blades/batteries/chargers

Wood Glue

Doors/door lumber

Door hardware

Concrete bit/concrete bolts

Goggles/safety glasses

Mini sledge/hammers

Sledgehammers

Poll driver

25' measuring tape

100' measuring tape

String roll

Table

Ladders

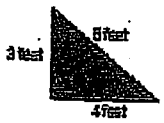
wikiHow
the how to manual that you can edit

How to Use the 3 4 5 Rule to Build Square Corners

One of the challenges when creating corners is getting them square. While no room is ever PERFECTLY square, we need to get the corners as close to 90 degrees as possible. If not, any tile or carpet laid will be noticeably "off" from one side of the room to the other. Using the 3-4-5 method for squaring corners will help ensure your corners are square. Use this approach when framing walls to make sure that your corners are square.

Steps

1. To create corners, we use the 3-4-5 rule from basic geometry: $A^2 + B^2 = C^2$. This means the square of the hypotenuse of a right triangle is equal to the sum of the square of both legs.

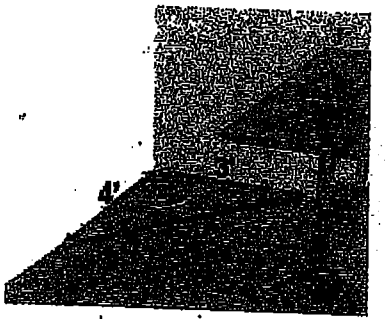


2. Measure 3 feet from the corner in one direction and make a mark.

3. Measure 4 feet from the corner in the other direction and make a mark.

4. Measure the distance between your marks. If your corner is square, the distance will be 5 feet.

   If the distance is less than 5 feet, then your corner has a measurement of less than 90°.



   If the distance is over 5 feet, then your corner has a measurement of more than 90°.

5. Adjust your framed walls as needed to ensure your corner is square.

How to square a building?

I have read the 3 4 5 rule, but I still don't understand. I am new at building so please help. If I have a building that is 16 x 20, then I have 2 walls 16' and 2 walls 20'. When I measure and move the line to make the five foot exact line to square it, then one of my 20' walls now becomes 20' and 6". What am I doing wrong?

4 years ago Report Abuse

Peanut

Best Answer - Chosen by Asker

a(squared) + b(squared) = c(squared).

So take the two measurements, 16' and 20', square each one and add them together, you'll get 256 and 400. Now add them together, and you get 656. This number is your diagonal measurement squared. So take the square root of that, and you get 25' 7-11/32" (or 25' 7-3/8" for a framer). That is your diagonal measurement. So your building should be that distance diagonally from corner to corner. Check them all to make sure. If it isn't working out, then something is wrong. I always figure if I'm within about an eighth of an inch when framing I'm in great shape.

Good Luck

Source(s):

Professional Estimator/Project Manager

4 years ago Report Abuse

Asker's Rating: ★★★★★

Thank you for the info. You have been very helpful.

vfr800cr...

Other Answers (4)

The 3-4-5 rule should always be increased to the largest ratio possible. In other words you simply double each number. For your walls I would use 6-8-10. You must take one wall as the straight one just as it is. I use felt tip pen and toothpicks. Make a batter board for the line that you will need to adjust left or right to get square. That is two stakes about 2' apart with a horizontal board between stakes. Center this batter board over your close wall line. Your designated straight wall line should never move. Mark it with felt tip pen at 6'. Stretch your other line to center of batter board. Put a mark on this string with felt tip pen at 8'. Now do your diagonal until you get 10' reading. If you must move string, move only the one with 8' mark. Re-check your 8' mark when you move string as sometimes the tension will be different and result in plus or minus 8'. When you get a 10' reading mark the horizontal board with the felt tip pen to show where string needs to stay. Have a buddy help you with this. For best results professionals put 2 batter boards at each corner. Place them back away from the true corners by about 2' each way. Good Luck.

4 years ago Report Abuse

Tedruski

Evil Independent

• 20' x 96'
20 Sq = 400
96 Sq = 9216
total sq = 9616
$\sqrt{9616} = 98$

• 20' x 60'
20 Sq = 400
60 Sq = 3600
total Sq = 4000
$\sqrt{4000} = 63.24$

• 20' x 48'
20 Sq = 400
48 Sq = 2304
total Sq = 2704
$\sqrt{2704} = 52$

• 20' x 24'
20 Sq = 400
24 Sq = 576
total Sq = 976
$\sqrt{976} = 31.24$

GROWING POWER™

5500 W. Silver Spring Dr.
Milwaukee WI 53218
Phone: (414) 527-1546
Fax: (414) 527-1908
www.growingpower.org
staff@growingpower.org

OUR VISION: "INSPIRING COMMUNITIES TO BUILD SUSTAINABLE FOOD SYSTEMS THAT ARE EQUITABLE AND ECOLOGICALLY SOUND, CREATING A JUST WORLD, ONE FOOD-SECURE COMMUNITY AT A TIME."

GROWING POWER'S APPROACH TO LAND ACQUISITION TO BUILD YEAR-ROUND HOOP HOUSES

Preface: Growing Power is a national nonprofit organization and land trust supporting people from diverse backgrounds, and the environments in which they live, by helping to provide equal access to healthy, high-quality, safe and affordable food for people in all communities. Growing Power implements this mission by providing hands-on training, on-the-ground demonstration, outreach and technical assistance through the development of Community Food Systems that help people grow, process, market and distribute food in a sustainable manner.

With over 70 projects and programs throughout the U.S., the organization diligently adheres to Will Allen's "Seven P's to Success": Pride, Patience, Passion, Performance, Perseverance, Partners, & Play. This document outlines one of Growing Power's methods for working with local stakeholders - PARTNERS- to achieve **socially responsible land use** that is both fulfilling the organization's mission and meeting the food security needs of individuals and families in the regional Milwaukee area.

Land Use Partnerships for Community Food System Projects (Hoop Houses): Like any new relationship, all of Growing Power's land use partnerships had a beginning. Depending on the partner and the circumstances, some of these partnerships were easily forged, whereas others developed over long periods of time. In determining the nature of the partnership, of most importance is outlining exactly what can be expected by the land holder with respect to use of the land while simultaneously being up front and honest about Growing Power's needs and what the organization has to offer. Principally, Growing Power requires total control of the land. It is preferred if the site is a secure location, but not exclusively so. Secondly, Growing Power requires a legally binding contract. Typical contracts are for a minimum of five years. Growing Power and the landholder negotiate the terms of the five year lease or Memorandum of Understanding (MOU) together. As the terms of the lease or MOU are negotiated, the authority (for the City of Milwaukee it's the Department of City Development) is notified to begin the process of permitting with respect to proper zoning and flood plain management. Documents are submitted to the Development Center Manager for permitting and after a period of about two weeks, the permit is granted at no charge and a Department of Neighborhood Services (DNS) inspector is notified of construction. Construction begins immediately. Early in the construction phase the DNS inspector is notified, pays a visit and verifies all is well.

Following are specific examples outlining the basic process of acquiring land to support the construction and maintenance of year-round hoop-houses in Metro Milwaukee:

SITE: Milwaukee Metropolitan Sewerage District - 5th Avenue
ZONING: Oak Creek - zoned agricultural
STEPS

1. Negotiate and execute 5 year lease
2. Submit layout, site plan, land use plan, materials list and hoop house drawings, building permit application, building occupancy permit, and payment to city inspection department.
3. Permit granted
4. Construct hoop houses
5. Inspector site visit – occupancy granted

SITE: Milwaukee Metropolitan Sewerage District - 5th Avenue
ZONING: Oak Creek - zoned residential
STEPS

1. Negotiate and execute 5 year lease
2. Submit layout, site plan, land use plan, materials list and hoop house drawings, rezone application or variance application, Certified Survey Map (CSM) drawn up by surveyor, and payment to city planning department.
3. Seek approval by planning commission.
4. Submit layout, site plan, land use plan, building permit application, building occupancy permit, and payment to city inspection department
5. Construct hoop houses
6. Inspector site visit – occupancy granted

SITE: Green Man
ZONING: Oak Creek - zoned manufacturing
STEPS

1. Negotiate and execute 5 year lease
2. Submit layout, site plan, land use plan, materials list and hoop house drawings, plan review application, and payment to city planning department.
3. Seek approval by planning commission.
4. Per planning commission contingencies: submit proper documentation, e.g., utility easement encroachment letter, new construction drawing, engineering calculations, to inspection department.
5. Upon approval, submit five copies of each of the following: layout, site plan, land use plan, building permit application, building occupancy permit, and single payment to city inspection department
6. Construct hoop houses
7. Inspector site visit – occupancy granted

SITES: Fire Station, 4th and Walnut, 10th and North
ZONING: Milwaukee: zoned industrial or residential
STEPS:

1. City of Milwaukee Department of City Development (DCD) recommends being in contact early in the process to establish proper zoning requirements and flood plain management assessment.
2. Negotiate and execute lease with landholder of five years.

3. Submit layout, land use plans, materials list and hoop house drawings with payment to DCD attention Development Center Manager. The hoop-house drawings were pre-approved by the City of Milwaukee and Milwaukee Public Schools.
4. The estimated time for permitting is about two weeks.
5. Permit granted at no charge, Department of Neighborhood Services (DNS) inspector assigned based on geographic location.
6. Construct hoop houses
7. DNS Inspector site visit – occupancy granted.

City of Milwaukee: Growing Power Vertical Farm
December 31, 2010 the Mayor of Milwaukee signed the rezoning for the Growing Power Vertical Farm. It had been passed by the City Council members to allow for the five story vertical farm to be built in a residential neighborhood.

Milwaukee Fire Department Engine House # 5: Fire Station
This Growing Power partnership began as a family relationship between Growing Power's Director, Karen Parker, her son, DeShawn Parker (Growing Power's Chef), and then Community Liaison, Joshua Parish, (now Captain of the Milwaukee Fire Department). In 1996 Mr. Parish worked with the Wisconsin Fire Safety Alliance (WFSA) burn camp associated with St. Mary's and Children's Hospitals and met DeShawn Parker through this camp. The family connection strengthened as Mr. Parish shopped at the Growing Power Community Food Center for Milwaukee Fire Department (MFD) events. After about 10 years worth of brainstorming, the idea to partner at MFD Engine House # 5 was born. In 2010, Growing Power & MFD entered into a Memorandum of Understanding (MOU) for one year to install raised beds. After the Job Creation Initiative was launched, the MOU was changed to five years in order to accommodate a longer term for the hoop house site that boasts four 20'x48' hoop houses filled with spinach and kale – year round.

Milwaukee Public Schools: Maple Tree Community Garden
During the summer of 2007, Growing Power entered a 20-year lease with the Milwaukee Public Schools System to manage a five acre lot neighboring the Maple Tree Elementary School. Growing Power maintains this space to help support the **Maple Tree Elementary School Garden**, where each of 17 classrooms manages a garden plot; the **Community Garden**, which provides rentable plots and training for community members; and the **Youth Corps**, whose youth members help maintain the Growing Power production beds in addition to their own growing beds. In 2009, Growing Power welcomed the involvement of the new Boys and Girls Club chapter that opened in Maple Tree Elementary School. 40+ children (9-12 yrs. Old) participate in garden activities weekly. Together, Growing Power staff and youth have planted peppers, tomatoes, eggplant, cantaloupe, pumpkins, greens, cucumbers, strawberries, and more. Through this urban agricultural project, Growing Power is training over 500 youth and community residents one of the most important self-help skills of all: how to grow their own food in their own community. The gardens together consist of thirty 15'x3' smaller plots and twenty 100'x3' larger community/Growing Power plots. Growing Power staff continues to install raised garden beds and a fruit orchard with community support and involvement.

Milwaukee Public Schools: Carlton Farm
Growing power has recently submitted a proposal to Milwaukee Public Schools (MPS) to request use of the asphalt grounds of the Carlton Elementary School for year-round production in hoop-houses. This site is in very close proximity to the Growing Power Community Food Center Headquarters. A site plan, layout, and construction documents have been submitted to the MPS Chief Operating Officer. One original goal of the Maple Tree Community Garden was to develop a land use template in order to quickly negotiate the lease terms of additional MPS properties for use by Growing Power, including the Carlton Elementary School site and any other MPS buildings and facilities.