

# *Balga's*

## *P. A. Taverner Purple Martin House*



### *Tools Required*

*Table saw*                      *Drill*  
*Jig saw or band saw*      *Hand tools*  
*Router*                          *Orbital sander*  
*Reciprocating saw*

### *Features*

*16 large compartments*  
*Detailed cutting and assembly photographs*  
*Hinged doors for easy cleanout*  
*Starling resistant entrances*  
*Winch operated*  
*Metal martin silhouettes/decoys*



*Complete Set of Photo Instructions*

## ***Preamble***

*When I was a young boy around the age of ten, my father and I visited a neighboring farm on a Sunday afternoon to dig out some fir trees for our back yard. The owner of the farm Mr. Pettypiece, who grew these trees for this purpose saw my interest in his bird house and was kind enough to show us the beautiful house that he built in his front yard and spoke to us briefly about PURPLE MARTINS. The colony was engaged in chatting among themselves and the lively family spirit they exuded was forever to mark my mind forever. The house was large and well put together but could not be lowered on the pole. The martins lived in close proximity with sparrows and starlings and from what I could see they were at peace with one another. The owner of the house was just pleased to have martins and he mentioned that he lowered the house on a pivoting pole at season's end to remove the old nests from the birds that lived there. Perhaps, my imagination as a 10 year old as to the height and number of martins was a bit exaggerated but the memory of that colony of martins and the kindness showed by Mr. Pettypiece as well as his love for the martins was a wonderful sensation and was one reason why I became so fond of martins.*

*It is hard to escape the sights and sounds of an active martin colony. As the dark purple bodies swoop through the sky with their cheerful calls, it is hard not to be swept up with the hub of activity around the house as the birds flutter about, perching on the rods and porches busily entering and exiting the nesting holes. People seem to love the challenge of attracting these beautiful birds and will try just about anything to draw their attention. This can lead to several hours of watching, innovating and exercising one's personal creativity. When you become a purple martin landlord, you become one of the hundreds of fellow hobbyists who attract and provide homes for these birds. Part of the enjoyment comes when meeting people from all walks of life and different backgrounds. All have the single desire to do what is best for the purple martin passion. Percy Algernon Taverner came up with the single compartment design of this house in 1919. The original house designer had many innovative ideas for this house and many have built the original design. The wood structure is not difficult to build if you have a few carpentry skills and a weekend or two to spare. The present design considerations and changes are an attempt to reflect modern recommendations now in effect for the species. The entire house is build it and occupy it at your own risk. If you have any questions,*

*E-mail me at [martinman@hotmail.com](mailto:martinman@hotmail.com).*

*I would like to thank you for using this plan and all those involved in the Purple Martin hobby for their many innovative ideas in assisting the martin comeback. I hope you enjoy building this martin house as I have enjoyed sharing this information. This is the second plan in a series. First Publication: Balga's Double Taverner Purple Martin House, April 2007 ; Balga's P.A. Taverner Purple Martin House, January 2009.*

*If you build a house , the martins will come!*

*Good luck with your martin project !*

*John A. Balga*

*January 2009*

## ***Good Martin Housing Design Features***

- Housing should be easy to raise and lower. Avoid tilting poles unless they can be lowered without upsetting the martin nest, eggs or young birds.***
- Each compartment should be easy to monitor and clean and come with a single compartment door or one large door for each side of the house.***
- Entrances holes and their arrangements should be designed to hinder starling and predator invasions.***
- Cavities should measure at least the size of the martin or greater. 6"x 6" x 6" compartments are no longer as acceptable as they once were. Wind blown rains have a greater impact upon smaller compartments. Young martins subjected to rain can develop hypothermia and may die. Predators can quickly snatch a martin from these smaller compartments.***
- A deeper compartment 6x12 inch or 7x12 inch is much better for fledging martins. (72 sq.inches/84 sq. inches)***
- Compartments should keep martins dry and drain out any water which happens to enter.***
- Porches can be provided for housing with SRE entrance styles but they are not absolutely necessary.***
- Provide some form of ventilation in the roof attic .***
- Housing should not turn when raised or lowered to its original compass orientation.***
- Removable nest trays can be provided to allow for quick nest checks as well as parasite control.***

# ***Building Your Own Taverner House***

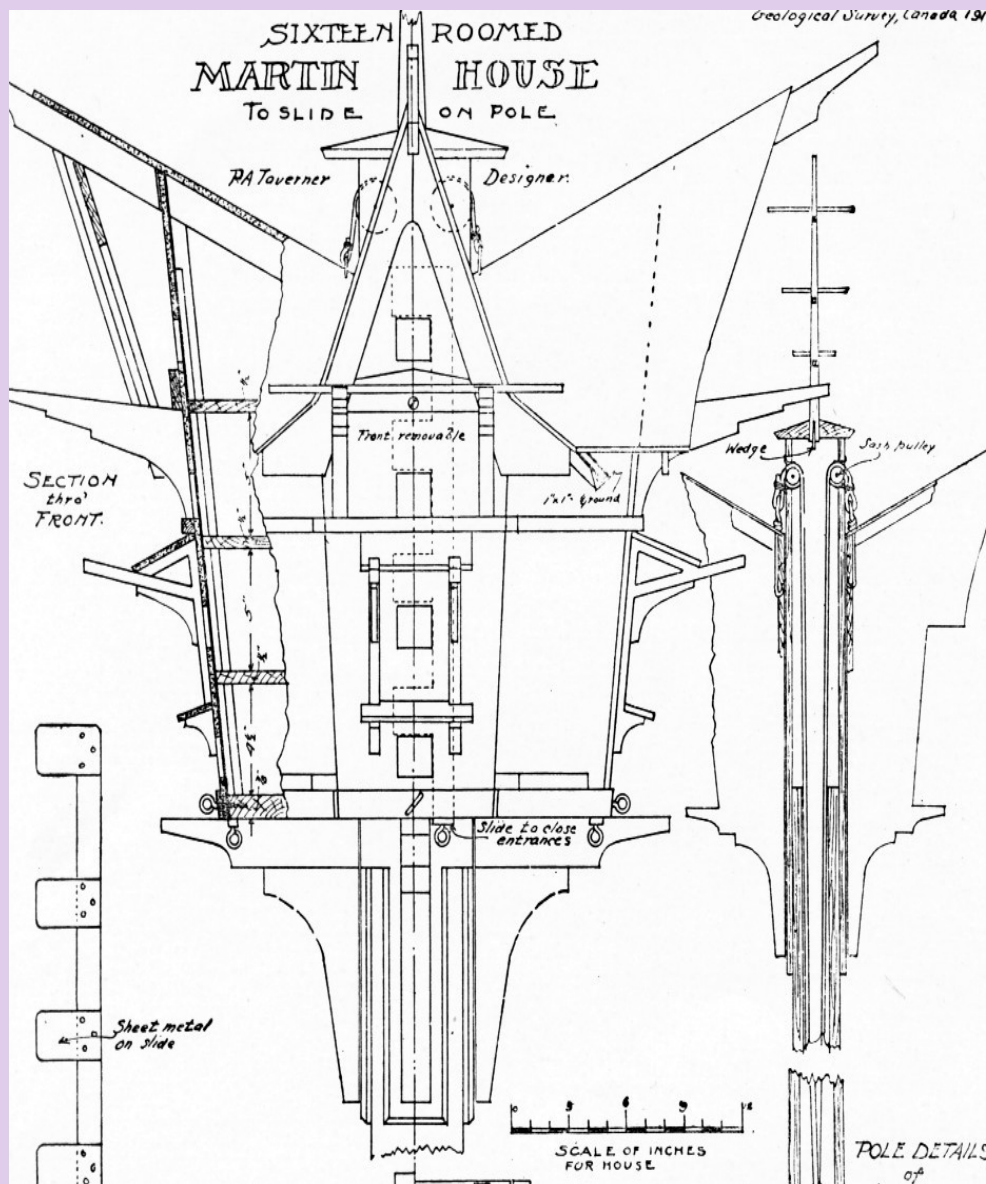
## ***Before Starting Your Project***

***NOTE: Read the entire booklet to familiarize yourself with the material required for this project.***

- ***Assemble all the materials and tools required. If you do not have access to a table saw, jig/scroll saw or other carpentry tools, contact a friend who has and arrange for cutting the materials.***
- ***Measure and prepare templates from cardboard so you are familiar with the alignment required for each section. It can then be saved for further reference and use.***
- ***Once you are comfortable with the pattern and its requirements, proceed to the next step.***
- ***Purchase your wood, screws and nails, door hinges and door hardware from your local lumber company.***
- ***Use your templates to trace your detailed drawings on the wood. Cut the measured pieces as indicated. Follow the steps carefully.***
- ***Mark and drill all nail/screw holes in the plywood and cut all entrances before assembling.***
- ***Cut entrances at least 1/4 to 1/2 inch above the floor to accommodate Starling Resistant Entrances. They may also be placed flush with the floor as well but if you are using a nesting tray don't forget to take the thickness of the tray's floor material into consideration so as not to block the entrance.***

# *The Original Sixteen Roomed Purple Martin House according to Percy Algernon Taverner, 1919*

*Bird Houses and Their Occupants, Reprinted from the Canadian Field Naturalist by the  
Canadian National Parks Branch of the Department of the Interior, Third edition, 1922,  
Ottawa, Ontario, Canada M.B.L.14,1920*



## Assembly Notes

*It is important to use 1/4 inch and 1/2 inch select fir plywood for the house. 3/4 inch good one side spruce plywood can be used for the center post tube section . Dowels can be purchased at your local lumber supply store.*

*Cut all your pieces with a table saw and number your pieces for each of the floor, compartment and roof sections before beginning assembly or cut and assemble as you go.*

*Sand and rout all pieces before assembling. Seal all joints and holes with acrylic latex caulking before painting the house. Do not assemble doors until the entire house is painted. It is not necessary to paint the inside of the house*

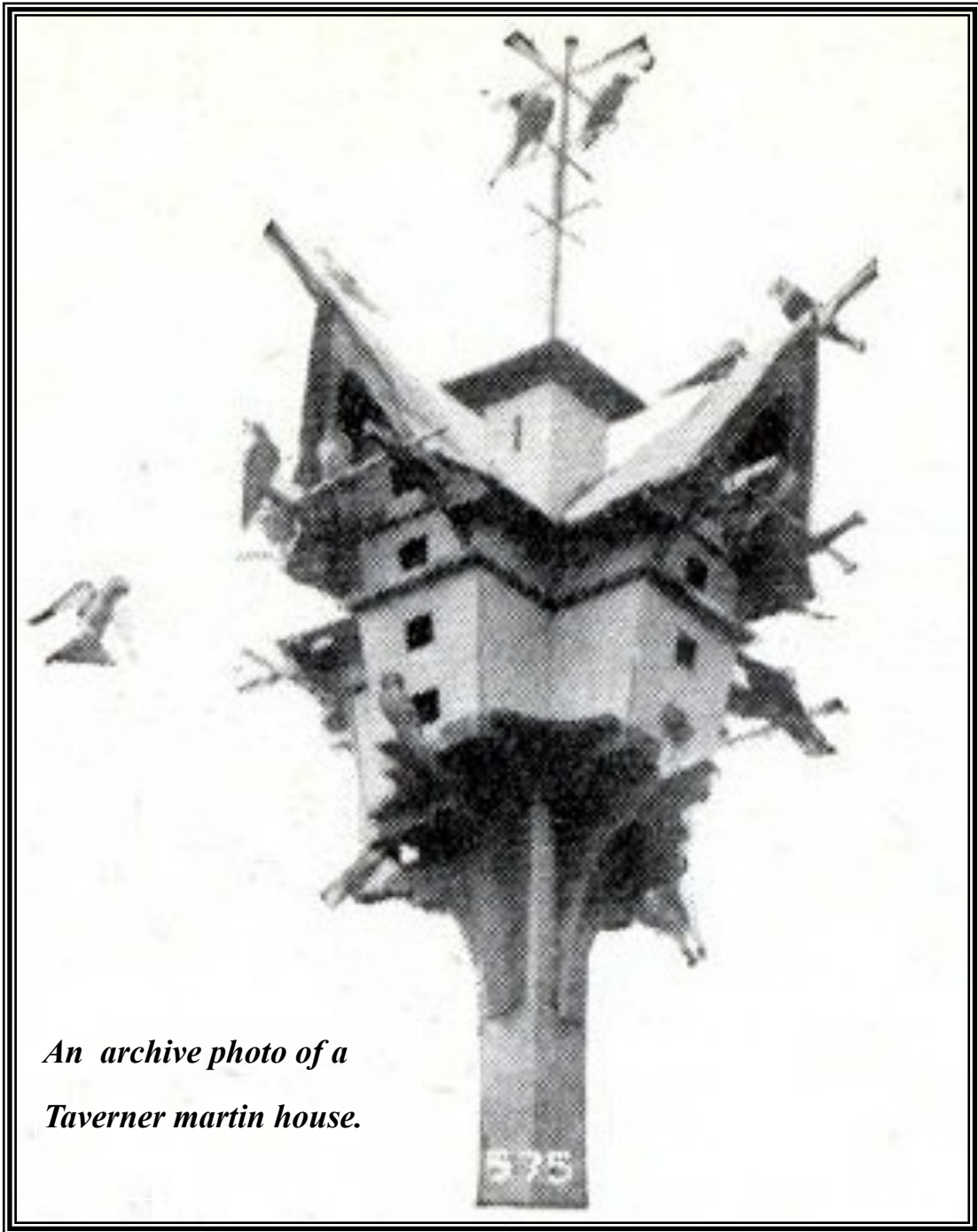
*Once the house is painted, attach doors and SRE plates . Add pre-painted decorative trim to the house if desired.*

*Nest trays may be built for the house using wood and aluminum sides or wood and plastic sides for each of the compartments. The tray sizes for each compartment will vary according to the compartment size.*

*The cable fastens to the base of the tube section of the house with a simple nut and bolt assembly. This should be added before sliding it on the pole. Drill holes through the post tube section and fasten the clamp before sliding the house on the pole. Added metal or wood pieces may be added based on the hardware selected.*

*Prepare your pole base using 4x4 sections for the outside section and one shorter section for the middle. Prepare the base with crushed gravel for drainage and 2-3 bags of good post hole cement. Attach your 15 -16 ' pole with two 12 inch carriage bolts. This is a heavy house close to 50 lbs. (22 kg.) so the base must be very secure.*

*Although every possible safety precaution is taken when illustrating the building of the house, it is up to the individual to follow through and use common sense and exercise safety precautions when using tools to build their own version. No warranties or liabilities are applicable.*



*An archive photo of a  
Taverner martin house.*

## ***Construction Details for the Taverner***

### ***Preparing the Center Shaft***

#### ***Post Tube: Step 1***



***Cut 4 pieces of 5/8" plywood ( 36"-48") long to allow for a 3 3/4 " clearance inside the tube section. This tube will fit a traditional 4"x4" pole.***

***Inside /outside piece measurements 2pcs. -3 3/4" and 2pcs.-5 1/4". If you do not want to add the bracket work use the shorter length.***



***Select the smooth crown side of the plywood for routing the cable path.***



***Rout a path 1/2" wide and 3/8" deep along the center length of all pieces. This will be used later to accommodate the cable which will run the length of the pole.***



***Center the router bit to make sure the router path is directly in the center of the post sides.***





*Nail and assemble the sides of the pole shaft using 1 1/2" galvanized nails/screws. The inside dimension of the tube should accommodate a 4" x 4" (3 1/2" x 3 1/2") standard wooden pole or a 3" o. d. round or square metal pole.*



*The completed and assembled pole shaft illustrates the grooves on the inside of the pole to accommodate any cable configuration. N. B. Use a piece of 4" x 4" and test your tube before proceeding.*



*Use a round over router bit to finish the corner edge of the post shaft.*



*The post tube (center shaft) is now ready for the next assembly step.*

## *Adding the Floor Cleat : Step 2*



*Cut 4 pieces of 1/2" plywood . (Cut to fit)*

*2 pieces: 1 1/2" x 5 1/4"*

*2 pieces"1 1/2" x 3 3/4"*



*Position the pieces 12 inches from the bottom of the pole shaft. The cleat on the bottom can be used later to attach your cable.*

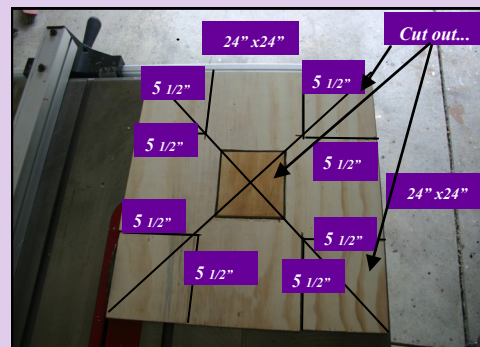


*Nail the pieces to the tube section so they do not pass through the center section. Use 1 1/2" galvanized nails/brads. To interlock the corresponding pieces. Sand the edges so they are flush.*

*Cut five 1/2 inch pieces of plywood to the following measurements: 24"x24"; 20"x20"; 21 1/2"x 21 1/2"; 23"x23"; and 24 1/2"x 24 1/2". Mark out the panels as illustrated in the following diagrams. Begin by drawing diagonals from corner to corner. Measure/trace the post tube section next and continue laying out the pattern accordingly. Lay-out each of the other panels similarly.*

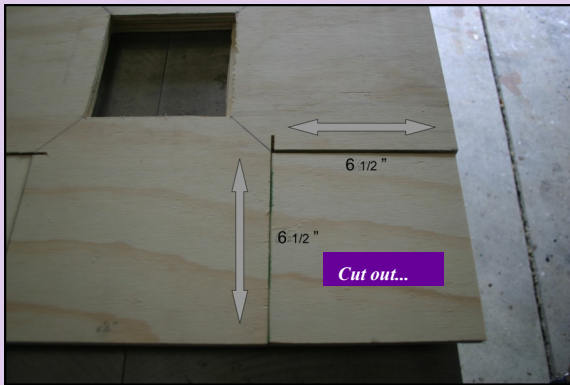
## *Preparing the Floor Sections:*

### *Step 3*

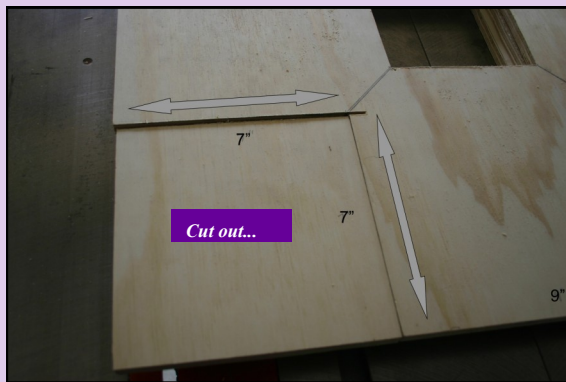




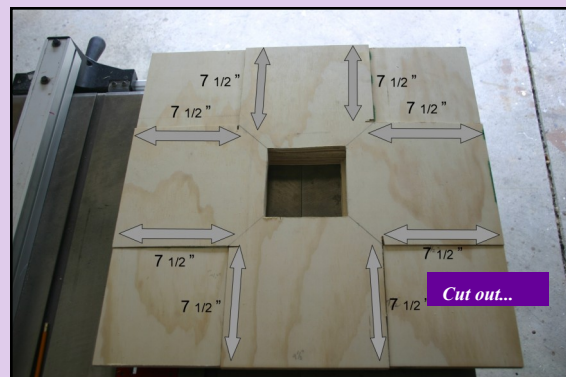
*After cutting the second panel 20"x20", mark out the panel by drawing diagonals from corner to corner. Measure the post tube section or trace the tube section (5 1/4" square) onto the plywood next and continue laying out the pattern accordingly to accommodate the room sizes. The hashed section 6" x 6" will be cut out.*



*Using the same format as for the previous piece mark out the details for the 21 1/2"x 21 1/2" piece. The area to be cut out should measure 6 1/2" x 6 1/2" from each corner.*

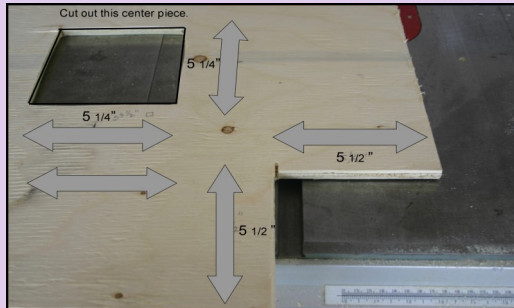


*Use the similar format for cutting out the 23"x 23" panel. The area to be cut out should measure 7" x 7".*



*Finally measure and layout the 24 1/2"x 24 1/2" panel. The area to be cut out should measure 7 1/2"x 7 1/2".*

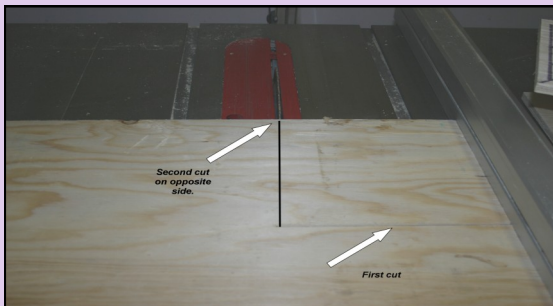
#### ***Cutting the Floor Sections: Step 4***



***After marking all the corners it is easy to set the fence on the saw to remove exactly the amount required. By rotating the piece, accurate cuts can be made for each corner.***



***On all plywood remove each of the corner sections as marked. Once the fence on the table saw is fixed at the correct measurement i.e. 5 1/2" then all corners can be removed exactly. Make a single cut first measuring 5 1/2".***

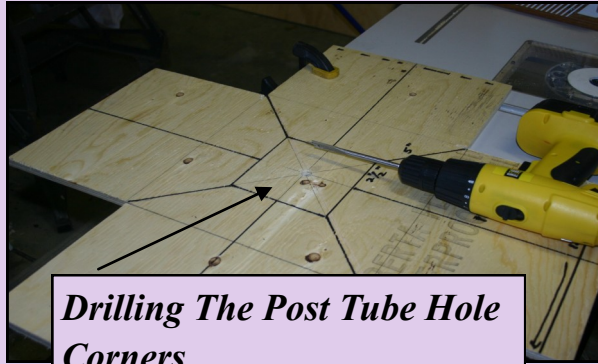


***Turn the plywood piece over and make another 5 1/2" cut. Repeat the process until all corners are removed.***



***The photo illustrates all the pieces and how the corner pieces have been removed.***

*Clamp the plywood floor to a secure table before attempting any further cutting. Drill a pilot hole in the center post hole section using a 1/2" spade bit. Secure your piece with clamps to a table before proceeding.*

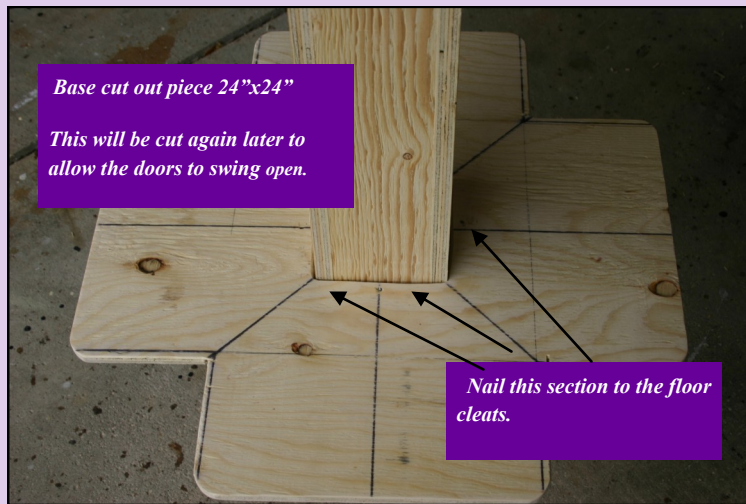


*Drilling The Post Tube Hole Corners*



*Cutting Out The Post Tube Hole*

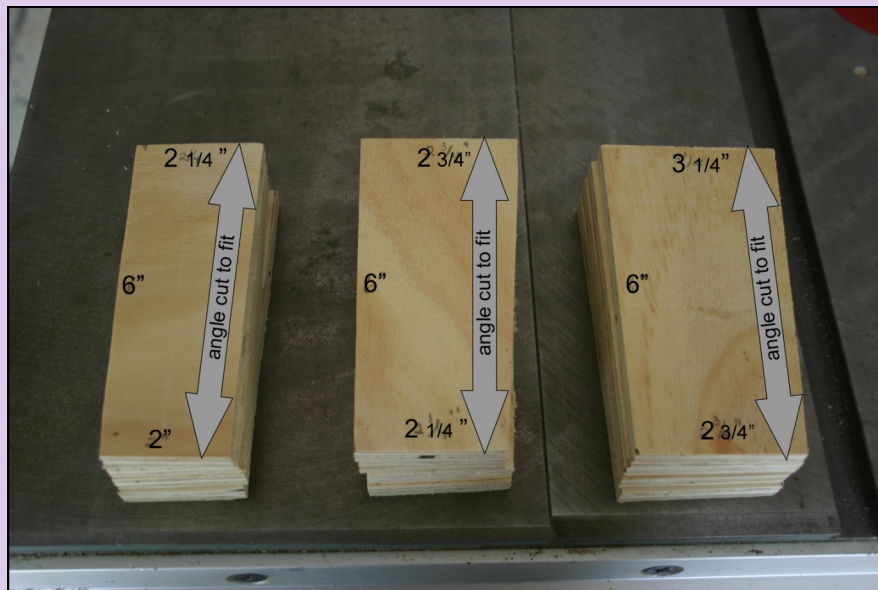
*Cut the post holes using a jig saw in all floors ensuring that they are all the same. Very Important! Check your post tube to ensure that the floors will pass through it.*



*Pass the bottom platform and all the others floors through the post tube for fit. Nail this first platform floor to the bottom cleat. Round the corners of this first floor section.*

## *Cutting the Dividers: Step 5*

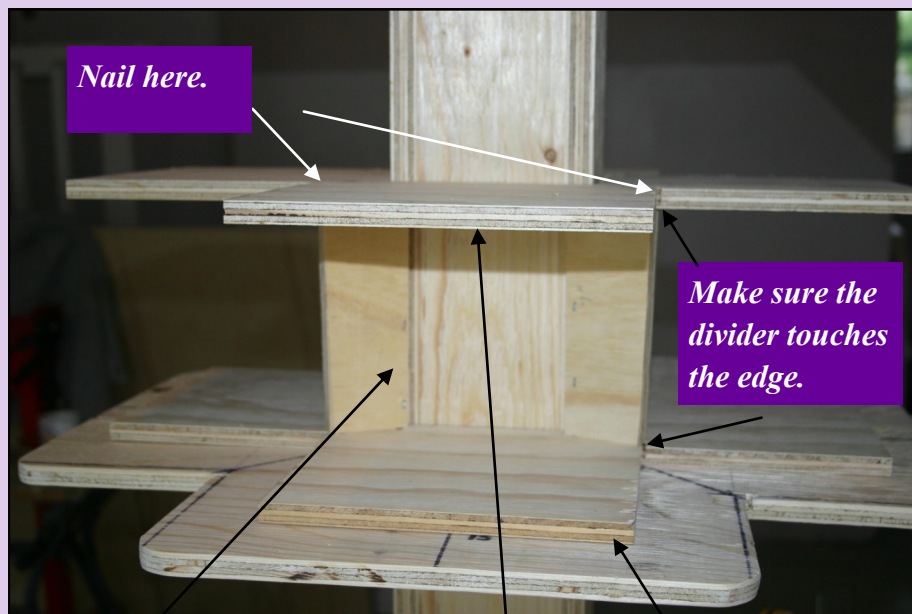
*Measure and cut the divider pieces for the floors. Each divider must be cut to fit the angle of the compartment. The measurements below are approximate and will vary due to the thickness of your wood. Cut and test fit one divider for each level before cutting all the rest.*



*The one side of the piece is 90 degrees while the opposite side varies. (approx. 8-10 degrees. Cut to fit)*

*The height for all dividers remains at 6 inches.*

*Assemble The Floors and  
Dividers: Step 6*



*Take the first four partitions and nail them to the post tube. A brad nailer works well here.*

*Nail the first floor to the bottom platform.*

*Add the next floor and nail this floor to the four partitions from above.*

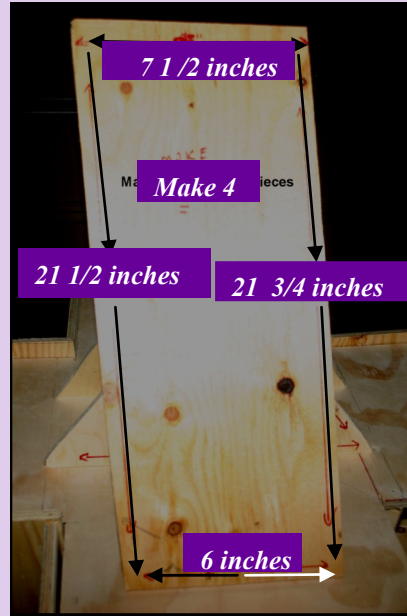
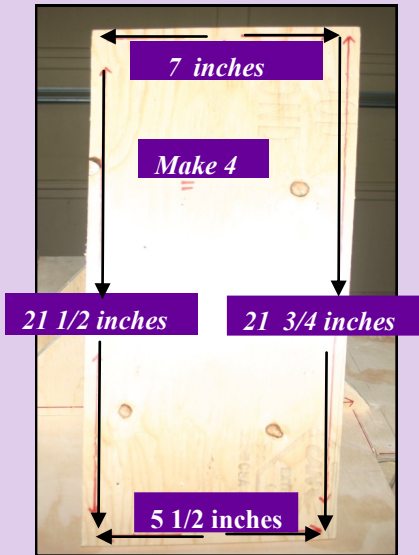
## *Floor Assembly Details*



*Continue measuring, cutting and nailing the partitions and the floors until you have assembled the house to the third floor.*



## Cutting The House Sides : Step 7



*Test fit each piece to ensure that all top and bottom edges are parallel.*

*Cut to fit accordingly.*

*Scribe and remove the necessary material to ensure a flush fit.*

## *Nailing the Sides to the House: Step 8*



*Nail the first two opposite sides to your house. These would be the pieces that are deeper at the base.*

*Nail the next two opposite sides ensuring that they are properly nailed to each floor level with one inch brads/nails..*



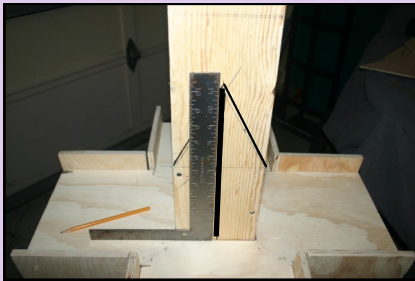
*Once all the sides are attached and the ends have been adjusted so all the tops and ends of the pieces have been scribed to ensure that everything is parallel, you are ready to tackle the roof.*

### *Roof Construction: Step 9*

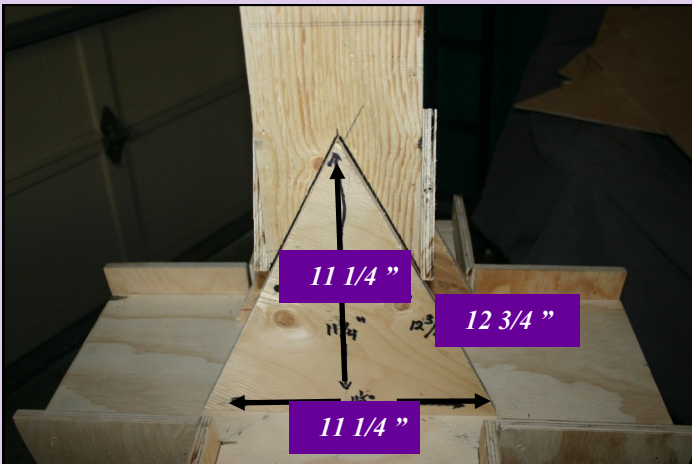
*Measure and mark the center of the post tube on all sides using a square.*



*Draw a perpendicular line to the base of the top floor.*



*Measure and mark 11 1/4 " from the base to the top of the pole.*

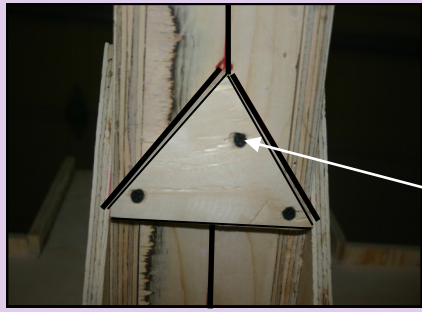
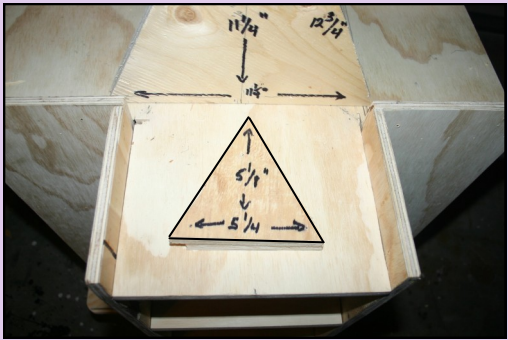


*Cut TWO pieces of 1/2" plywood to the dimensions illustrated. These will be used to support the roof and to act as dividers for the upper floor.*



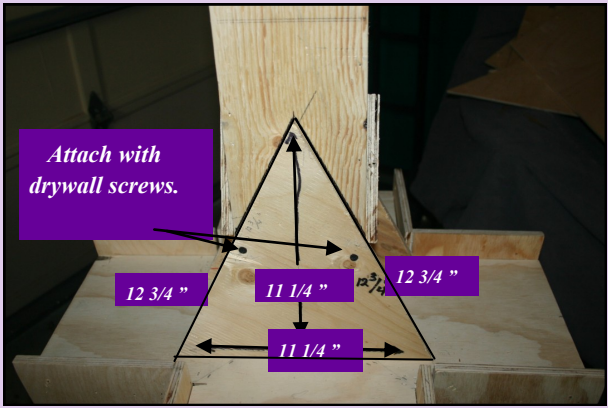
*Using the larger triangular section, mark the walls on the center post on all four sides.*

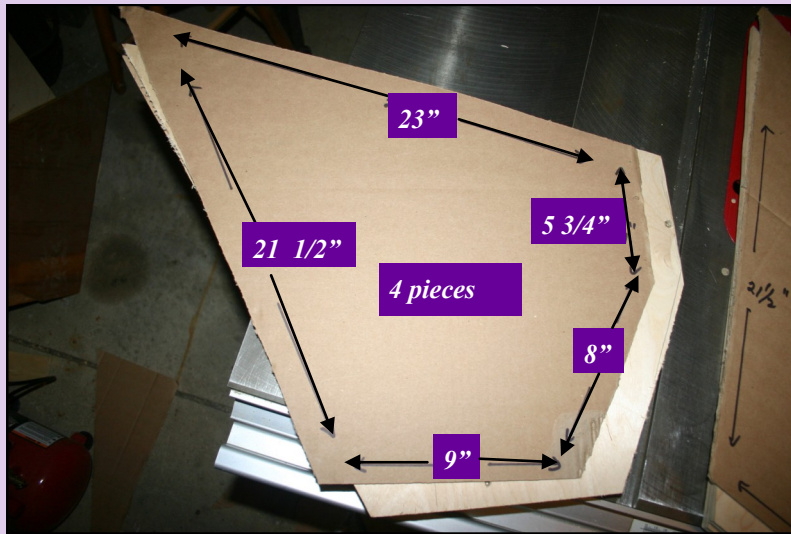
*Cut two small triangle pieces as illustrated and can be made from scrap plywood . 5 1/8 inch height; 5 1/4 inch base.*



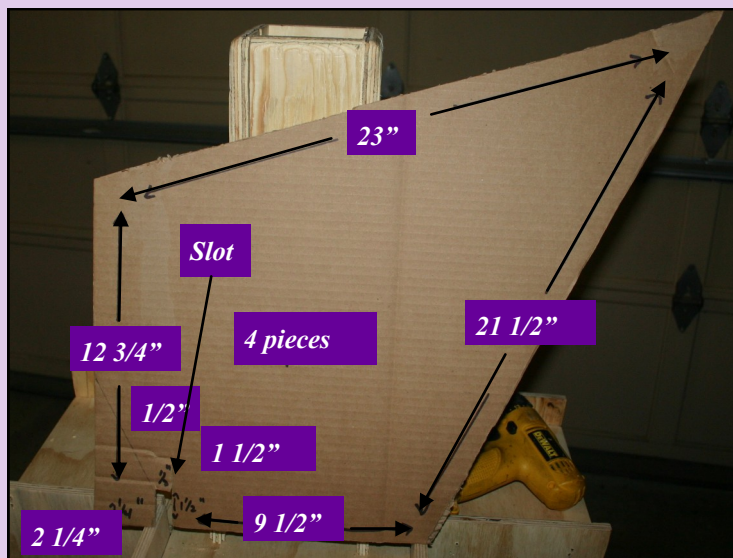
*Install these two smaller pieces at the indicated mark using 1 1/4 inch dry wall screws. Angle the screws so they do not protrude inside the post hole section nor interfere with the roof gable.*

*Install the two larger triangles similarly on opposite sides of the post tube .*





*Measure and cut a cardboard pattern which you will use to produce the first four roof pieces.*



*Measure and cut a cardboard pattern which you will use to produce the second set of four roof pieces. This set will require that you cut a slot to accommodate the side pieces.*

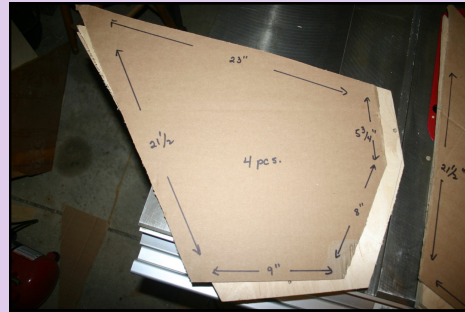
## *Testing Your Pattern : Step 11*



*The first pattern to be installed is the one illustrated here.*

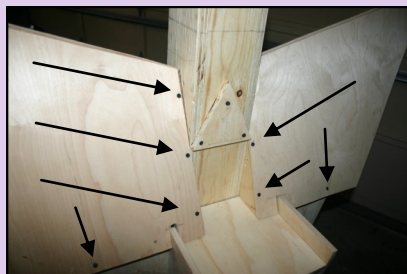
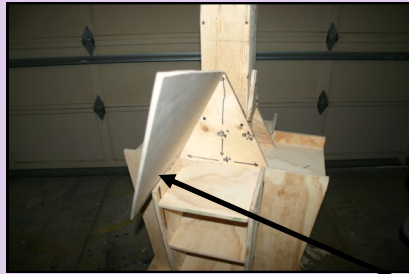
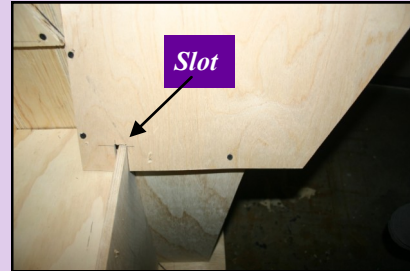
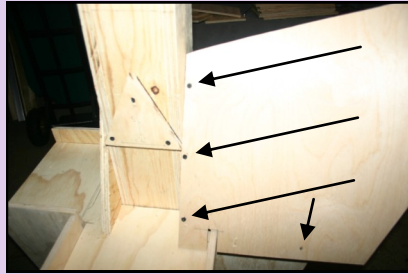


*The second roof pattern to be installed is the one illustrated here. Both roof sides and opposite sides must be test fitted before proceeding to the pattern transfer.*



*Transfer your pattern to the 1/4 inch plywood and cut out as many as required.*

## *Assembling The Roof: Step 12*

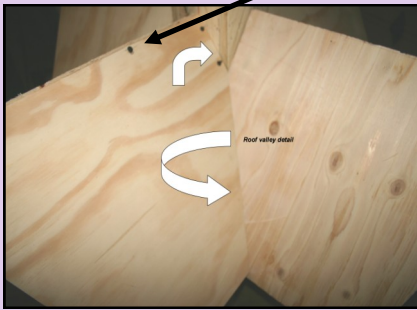


*Use drywall screws to secure the bottom of the roof side. Similarly, use enough screws to secure the roof.*

*The two larger roof sides have now been assembled and fit neatly into the wall sides using one inch drywall screws. Proceed to the next smaller roof sections and assemble accordingly.*



*Note how the roof valleys are assembled. Screw the roof peaks together making sure the screws do not come through the other side of the roof. Note: The top of the roof will be finished with a wooden ridge cap.*



*If the sections do not align, scribe and angle cut the roof sections until they fit. Before painting, a bead of caulk can be added around the post tube and roof valley to prevent water from entering the house.*



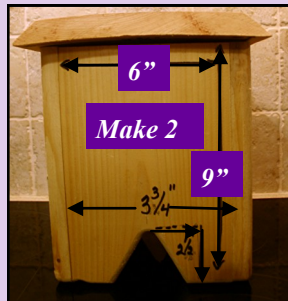
*The roof sections have been completed and the pieces reinforced with drywall screws.*



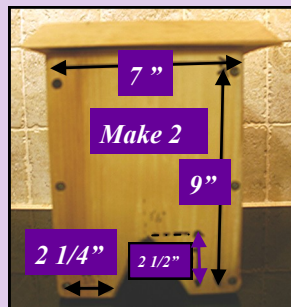
*As mentioned above, this section of the roof requires attention . Angle cut the ridge of the roof until it fits flush and maintains the slope of the roof.*



### *Preparing the Post Cap: Step 14*



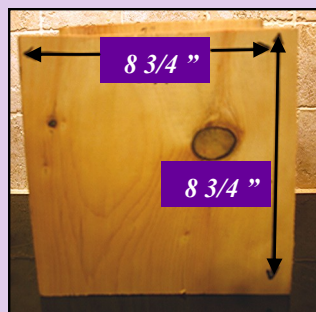
*The post cap is constructed of 3/4 " material and consists of four sections and a cap. Mark and cut out two pieces as illustrated.*



*Mark and cut out two opposite side pieces as illustrated and angle cut the bottom to accommodate the roof sections. The roof cap length can be adjusted to suit your individual pole and pulley configuration.*

#### **NOTE:**

*Test fit the cap using your choice of pole /pulley assembly.*



*Attach the roof cap with four deck screws and rout the sides. You may wish to round over the edges using a router before attaching it to the pole and before adding the perch assembly.*

### *Preparing the Roof Ridge Caps: Step 15*



*Make four roof ridge caps from a length of 1" x 2" inch pine . Each piece should measure 26 1/2 " long .*



*Set your saw on an angle to suit your roof and run your pine to form a v-groove on the bottom of each piece. Check for fit as you remove the material.*



*Contour cut the end of the pine piece to allow for some architectural variance using a jig or band saw. Sand this piece before attaching it to the roof. Cut a wooden block under the roof to secure the ridge cap.*



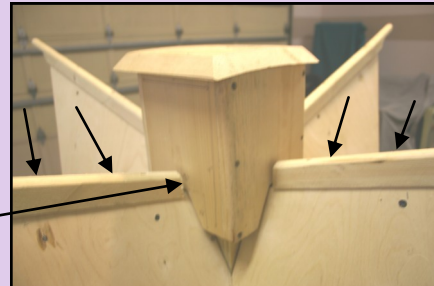
*A router can be used to round over the top edges and shape the end piece.*



*Angle cut the end so it is parallel with the post cap.*

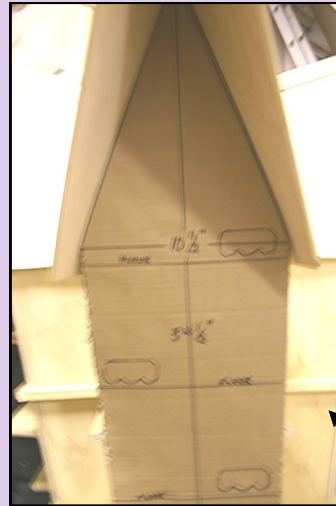
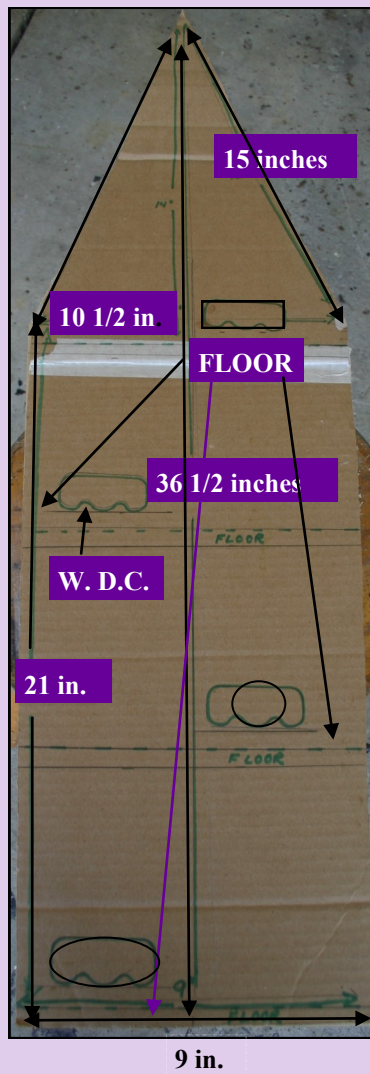
### *Attaching the Roof Ridge*

*Countersink and drill holes in the ridge cap. Position the ridge cap to allow at least 1/2 inch clearance for the post cap.*



*Roof ridge has been fastened into position with temporary post cap in place.*

## Measuring and Cutting the Fronts : Step 16

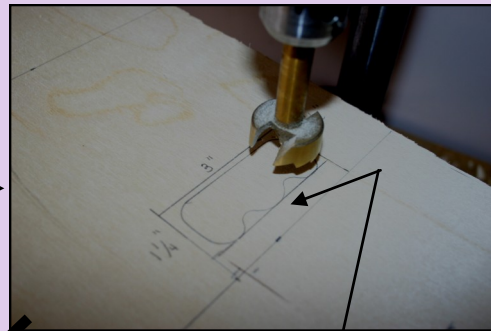
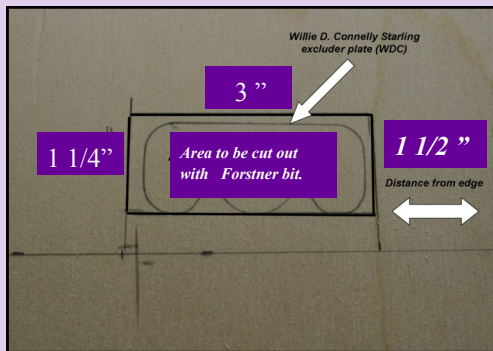


*The cardboard rough door pattern has been completed with the adjacent house measurements . Adjust the measurements to suit your pattern and your wood thickness. Refer to sample measurements for ideas. Cut to fit four door panels and number each panel accordingly.*

*Mark out the staggered entrance holes on the pattern as illustrated. These may be added to the sides of the house to prevent any porch domination.*

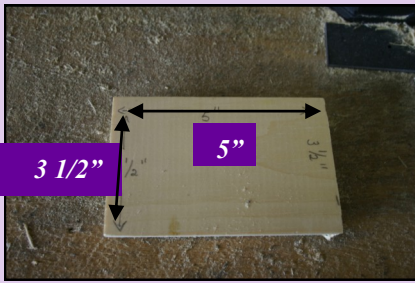


*Use the pattern to test fit the front before measuring and cutting four pieces of 1/2 inch good one side plywood for the front pieces.*



*The oversized holes for the plate have been drilled using a 1 1/4" Forstner bit and trimmed with a jig saw. Entrance plates measuring (1 3/16") may now be measured, and cut to fit.*

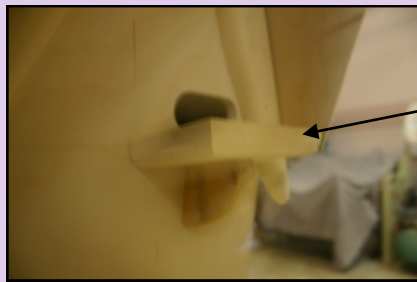
*Preparing the Porches :Step 17*



*Cut out 12-16 rectangle pieces 3 1/2 " x 5 ". Rout the edges with a round over bit. Angle cut one side to fit the door angle. This will allow the perch to rest horizontally on the face of the door. See note below.*

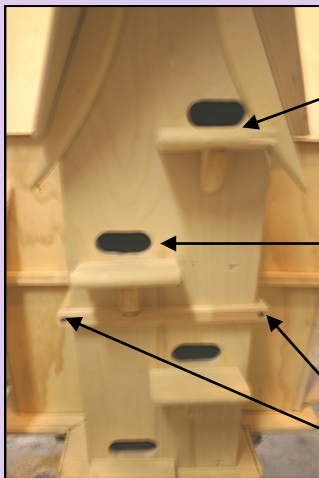


*The perches may be added after if you prefer. Glue a support block to the bottom of each perch and secure from behind with a drywall screw.*



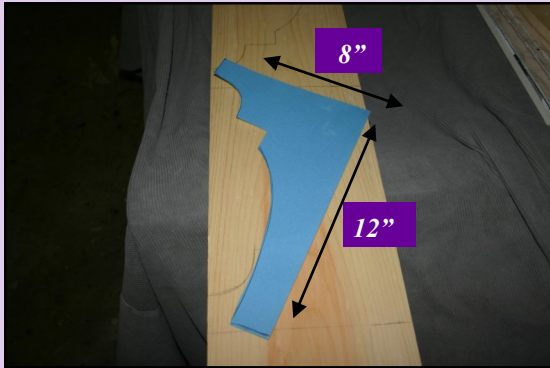
*The completed perch assembly as it should appear .*

*Perch should be positioned 1/4-1/2 inch below entrance to allow for entrance plates if so desired.*



**PLEASE NOTE: IMPORTANT**

*Perches arranged in a staggered pattern to prevent owls from removing martins and young. All perches can be used if you do not intend to hinge the door. The door may be removed by loosening two screws. See Pg. 33 to install hinged doors.*

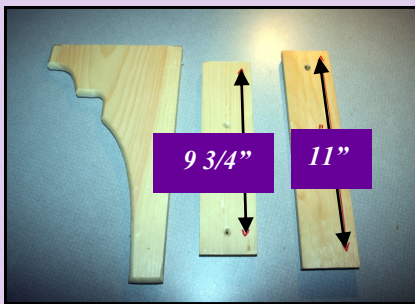


***Preparing the Post Tube Brackets:  
Step 18***

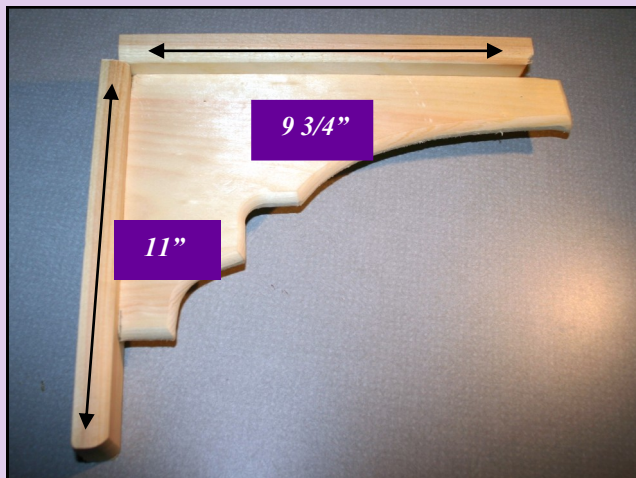
*Create your own pattern for the bracket assembly and trace it on the material you have. This bracket will be traced on 1" x 8" pine.*



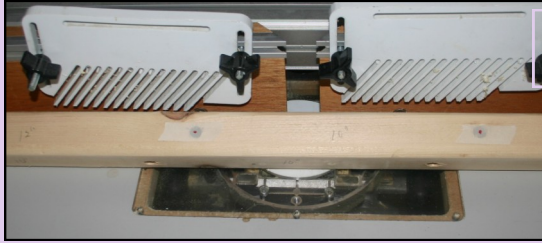
*The brackets have been cut out and will be sanded and routed with a round over bit.*



*The back of the brackets are cut from 1" x 3" pine, routed and cut to fit the bottom of the house allowing for the floor support. These two pieces are 9 3/4" and 11". Attach each one to the bracket with two deck screws.*



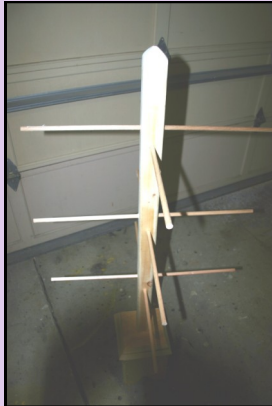
*The finished bracket can be added before or after painting the house with a few deck screws. It is easier to mount the house on the pole without the bracket.*



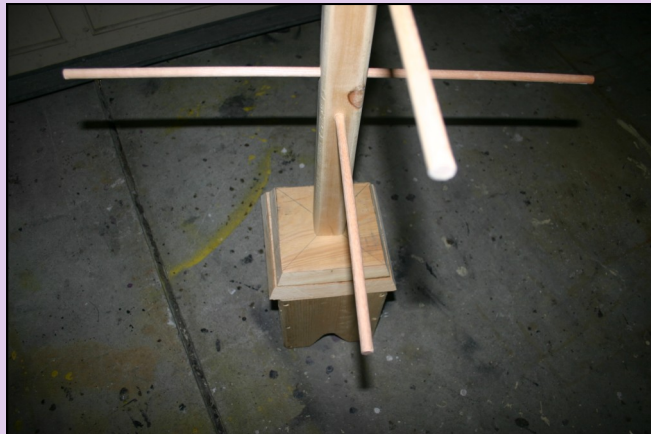
### *Preparing the Perch: Step 18*

*Rout the edges of the mast with a round over bit after marking out the perch location.*

*Use a 7/16" bit to drill the holes for the perches. If you use larger diameter dowels, adjust*



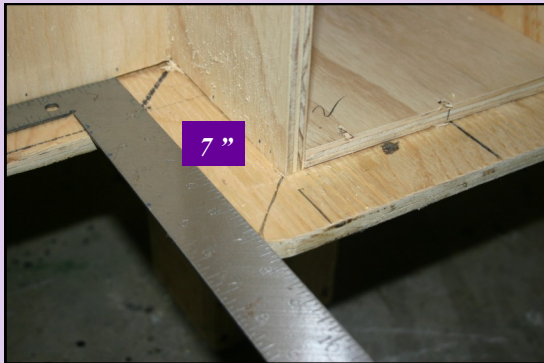
*Six- 24 inch - 7/16" dowels were used in this assembly. More can be added if you wish. The end of the mast was angle cut for esthetics.*



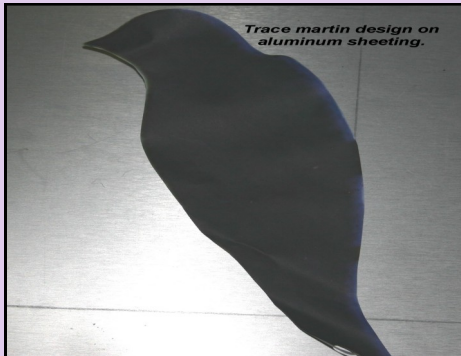
*The mast has been attached to the 7"x 7" base with dry-wall screws and the 24" perches have been centered, glued and brad nailed. The larger bottom piece will be screwed to the post box cap assembly before attaching the perch assembly.*



## Preparing the Hinged Doors: Step 19



## *Adding Purple Martin Silhouettes/Decoys: Step 20*



*Using a template trace the image on a piece of galvanized metal sheet or aluminum. Use a punch to detail the eyes.*

*Using metal shears cut out the silhouette. File and sand the rough edges.*



*Use your imagination to design more purple martin silhouettes. Cut out feather detail and bend and shape your martin. Drill a small hole in the martin to attach to the perch.*

## ***Cut and Material List: Refer to photos for sizes***

<u><b>All Four Sections</b></u>	<u><b>Roof Sections</b></u>
<p><i>1 sheet</i>      <i>4' x 8'x1/2" (good one side ) fir plywood</i></p> <p><i>1/2 sheet</i>      <i>5/8" spruce plywood</i></p> <p><i>4 fronts</i>      <i>10" x 37" x 1/2 (cut to fit)</i></p> <p><i>4 floors</i>      <i>24" x 24" x 1/2"</i> <i>21 1/2" x 21 1/2" x 1/2"</i> <i>23" x 23" x 1/2"</i> <i>24 1/2"x 24 1/2" x 1/2"</i></p> <p><i>8 sides</i>      <i>21" x 9" x 1/2" (cut to fit)</i></p> <p><i>12 partitions</i>      <i>6" x 12" x 1/2" (cut to fit)</i></p> <p><i>16 porches</i>      <i>3 1/2 "x 5"</i></p>	<p><i>4 roof sections</i>      <i>17 1/2" x 15" x 1/4"(cut to fit)</i></p> <p><i>4 ridge caps</i>      <i>1" x 2" x 24" (cut to fit)</i></p>
	<u><b>Accessories</b></u>
	<p><i>4</i>      <i>6" piano hinges</i></p> <p><i>1 1/2" galvanized nails as needed</i></p> <p><i>60</i>      <i>1 1/4"-1 1/2" drywall screws</i></p> <p><i>24</i>      <i>1 3/4" deck screws</i></p> <p><i>16</i>      <i>starling resistant plates 3" x 5"</i></p> <p><i>64</i>      <i>1/4" Robertson tap screws ( for plates)</i></p> <p><i>1 1/4" brads as needed</i></p>
	<u><b>Bracket Pieces</b></u>
	<p><i>4 supports</i>      <i>3" x 9" x 1/2"</i></p> <p><i>4 supports</i>      <i>3"x 7 3/4" x 1/2"</i></p> <p><i>4 brackets</i>      <i>cut from pattern (7 1/2"x11")</i></p>
	<u><b>Trim Pieces</b></u>
	<p><i>8 pieces</i>      <i>1" x 1" x 10" (cut to fit)</i></p>
	<u><b>Post Tube Section</b></u>
	<p><i>2</i>      <i>3 3/4" x 48" x 5/8"</i></p> <p><i>2</i>      <i>5 1/4"x 48 " x 5/8"</i></p>
<p><b><i>If you have any questions contact me : martinman@hotmail.com</i></b></p>	

***Pole Mounting Kit***

- 1 (brake) winch
- 30' 3/8" galvanized aircraft cable
- 1 3 1/2" pulley
- 1 4 " x 1/2 " bolt, washer and nut
- 1 safety bolt 1/2" x 6"
- 1 U -bolt for sleeve
- 1 cable eye
- 2 cable clips
- 1 cable nipple end for winch
- 2 12" x 1/2" carriage bolts, nuts, washers
- 1 lock
- 1 12 " chain
- 1 predator proof guard (optional)

***Caution***

*Always insert the safety bolt into the pole just above head level to avoid injury!*



***Kid Proof Your Martin Site***

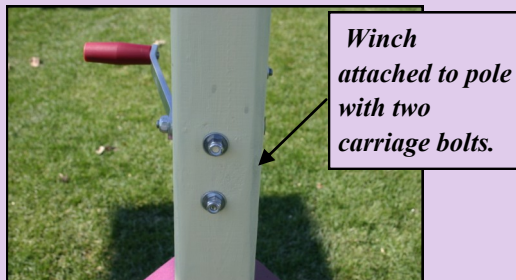
*Never leave the winch like this! Secure it with a lock and chain!*



***Post Requirements***

- 1 15' x 4" x 4"
- 1 15' x 4" x 4" cut in three for post base
- 1 mounting kit
- 3 (33Kg/ 66 lb. bag) post hole cement

*Proper post installation : Three feet is placed in ground and three feet above. Post base is secured with two carriage bolts.*



## *Quick Parts Reference List*

<i>No.</i>	<i>Quantity</i>	<i>Description</i>	<i>Sizes</i>
<i>1</i>	<i>2</i>	<i>Post tube sides</i>	<i>Refer to page 8</i>
<i>2</i>	<i>2</i>	<i>Post tube sides</i>	<i>Refer to page 8</i>
<i>3</i>	<i>4</i>	<i>Post tube brackets</i>	<i>Refer to page 31</i>
<i>4</i>	<i>4</i>	<i>Floor sections</i>	<i>Refer to page 10</i>
<i>5</i>	<i>12</i>	<i>Floor dividers</i>	<i>Refer to page 14</i>
<i>6</i>	<i>4</i>	<i>Floor cleats</i>	<i>Refer to page 10</i>
<i>7</i>	<i>4</i>	<i>Roof ridge</i>	<i>Refer to page 26</i>
<i>8</i>	<i>8</i>	<i>Roof Sections</i>	<i>Refer to page 28</i>
<i>9</i>	<i>4</i>	<i>Front sections</i>	<i>Refer to page 35</i>
<i>10</i>	<i>1</i>	<i>Post cap</i>	<i>Refer to page 25</i>
<i>11</i>	<i>1</i>	<i>Perch mast</i>	<i>Refer to page 32</i>
<i>12</i>	<i>1</i>	<i>Pulley</i>	<i>3 1/2" x 1/2"</i>
<i>13</i>	<i>1</i>	<i>Main post</i>	<i>14" - 16' (4' x 4')</i>
<i>14</i>	<i>30 feet</i>	<i>Cable</i>	<i>1/4"-3/8"</i>
<i>15</i>	<i>3 bags</i>	<i>Concrete mix</i>	<i>66 lb.</i>
<i>16</i>	<i>4</i>	<i>Nuts, washers, bolts</i>	<i>4 1/2" x 1/2"</i>
<i>17</i>	<i>1 lb.</i>	<i>Drywall screws</i>	<i>1", 1 1/4", 1 1/2"</i>
<i>18</i>	<i>16</i>	<i>SRE entrances</i>	<i>3" x 5"</i>
<i>19</i>	<i>1</i>	<i>Eye bolt</i>	<i>1/4" or 5/16"</i>