**Design and Construction of a
Single-Story Purple Martin Birdhouse**

**1.0 Introduction**

1.1 This specification is for the design and construction of a single-story purple martin birdhouse.

1.2 The owner, Patrick H. McMurrey, will have exclusive rights of ownership for the drawings, design, and fully constract purple martin bird houses. When this bid is awarded, these specifications will become the legal document specifying the requirements of Patrick H. McMurrey. An exploded diagram of the bird house is shown in the illustration to the right.



**2.0 Scope and Responsibilities**

2.1 The bidder who is selected shall obtain the required materials, construct the bird houses, and perform other finishing work as required in these specifications.

2.2 Any deviation from the requirements in these specifications requires the approval of the owner.

**3.0 Definitions**

3.1 Owner: The owner or client of these specifications, the design, and constructed purple martin houses, Patrick H. McMurrey.

3.2 Bidder: The contractor receiving the bid to construct these purple martin houses based on these specifications.

**4.0 Materials**

4.1 All screws shall be 3/4. #6 flathead screws.

4.2 All plywood shall 4' × 8' 1/4" high-grade plywood.

4.3 The base shall use 14" × 1" × 2" high-grade lumber.

4.4 The chimney shall use 6" × 2" × 2" high-grade lumber.

4.5 Corner blocks shall be 8" × 1" × 1" high-grade lumber.

4.6 Railings shall use 1/2" maple dowel.

4.7 Standard metal window screen shall be used.

4.8 1/4" theaded metal rod shall be used.

4.9 Standard exterior-grade wood glue shall be used.

4.10 Under no circumstances shall nails of any kind be used in the construction of this purple martin bird house.

**5.0 Design Requirements**

5.1 The base shall be constructed of 4 pieces of 24-1/2" of 1" × 2"; 1 piece 23-1/2" of 1" × 2" ; and 2 pieces 11" of 1" × 2".

5.1.1 These pieces shall be assembled with the wood screws.

5.1.2 A 1/4" hole shall be drilled at the center of the center base piece.

5.2 The floor of the birdhouse shall be 25" × 25" made from the plywood.

5.2.1 A 1/4" hole shall be drilled at the center of floor piece.

5.2.2 The base shall be attached to the floor with 4 of the wood screws.

5.3 The sides of the birdhouse shall be constructed of 4 pieces of plywood, 18-3/4" × 6" each.

5.3.1 Two of the sides shall have three 3-1/4" holes each.

5.3.2 These holes shall be spaced from one edge by 3" and from the other edge by 3-1/4" with 6-1/4" between the holes. The three holes shall be located 1" from the top of the sides.

5.3.3 The other two sides shall have one 3-1/4" hole each. These holes shall be centered with 9-3/8" on either side. The holes shall be located 1" from the top of the sides.

5.3.4 The four sides shall be assembled, alternating 3-hole sides with 1-hole sides, and shall be attached with three wood screws at the end of each side.

5.3.5 The side assembly shall be attached to the floor and base assembly with 4 blocks 1" × 1" 5-7/8" long attached to the floor by wood screws (2 per block).

5.4 The partitions for the 9 rooms in the birdhouse shall be constructed from 4 plywood pieces 18-1/2" × 6".

5.4.1 Each partition piece shall have two 1/4" slots 3" long, centered and located 3" apart.

5.4.2 The partition pieces shall be fitted together and placed within the assembled sides.

5.5 The ceiling shall be 24" × 25" constructed of plywood.

5.5.1 The ceiling shall have a 5" square cut in the center (9-1/2" from each of the 4 sides).

5.5.2 The ceiling shall be attached to the base-floor-sides assembly with 4 blocks, 1" × 1" × 2" each, attached by the wood screws to the underside of the ceiling.

5.6 The three roof supports shall be constructed from three pairs of plywood, each piece forming a triangle 24" long and 5-3/4" high, glued together.

5.6.1 Four of the roof support pieces shall have 2-1/4" holes for windows, centered on the roof support pieces.

5.6.2 The windows shall be covered with metal screen sandwiched between the 2 outer roof-support pieces.

5.6.3 All three roof support pieces shall be glued together using the wood glue and shall be attached to the ceiling from underneath using 2 wood screws per support.

5.7 The roof pieces shall be constructed of 2 plywood pieces, 25" × 14-1/8" and shall attached to the roof supports using 2 wood screws per roof piece (4 screws per roof support).

5.7.1 The roof pieces shall be bevelled to fit at their point of contact.

5.8 The chimney piece shall be constructed from 2" × 2", extend 2-1/2" above the roof peak.

5.8.1 The chimney piece shall have a 1/4" hole drilled through it for the threaded rod.

5.8.2 The chimney shall be attached to the roof from underneath with 2 wood screws.

5.9 The railing shall be constructed of 1/2" dowel and the railing posts shall be constructed from 1" × 1" × 3".

5.9.1 The railing shall be attached to the posts by fitting and gluing the railings into 3/4"-deep, 1/2"-diameter holes drilled into the posts.

5.9.2 The posts shall be attached to the floor from underneath at the four corners of the floor using one wood screw per post.

5.10 The base, floor, sides, partitions, roof assembly and chimney shall be fastened together with the threaded rod inserted through all the pieces and then tightened with a nut at the bottom, just beneath the base.

**6.0 Inspection**

6.1 The threaded rod shall be easily inserted through all the components of the bird house and the nut used to tighted all the components of the bird house.

6.2 The entire assembled birdhouse, once tightened together with the threaded rod and nut, shall be firm, sturdy, with minimal clatter when shaken.

6.3 The threaded rod shall be easily pulled from the birdhouse assembly once the nut is removed.