

20' x 20' Detached Garage Construction Plan

Floor Plan (Framing Layout)

Garage (Detached) Size: 20' deep × 20' wide

Wall Height: 8'

Door: 16' garage door centered on front wall, 36" entry door 12' from back right corner

Front Wall Layout:

| 2' | 16' Door | 2' |

- Studs at 16" O.C.
- Header over garage door: (2) 1/34x11 3/4
- King studs and jack studs on both sides of 36" rear door
- x1 King studs and x4 jack studs on each side of garage door opening
- No windows on front wall

Side Walls Layout (20' walls):

- Solid framing (no openings)
- Studs spaced 16" O.C.
- 36" entry door located 12' from right rear corner

Rear Wall Layout:

- Studs spaced 16' O.C.
- No windows

Foundation Plan

- 4" thick concrete slab
- Turn down slab, 16" deep perimeter, 12" wide
- 12" × 12" continuous footers under all exterior walls
- Reinforced with two (2) continuous #4 rebars around perimeter

- 6 mil plastic vapor barrier underneath entire slab
- Concrete strength: 3500 psi

Anchor Bolts:

- ½" diameter × 10" long anchor bolts
- Placed within 12" of all corners and door openings
- Spaced maximum 6' apart along walls

Roof Framing Plan

Roof Type: Gable roof, 6/12 pitch

Span: 20' wide

Framing:

- 2×6 rafters @ 24" O.C.
- Ridge board: 2×8 running 20' length
- Stick Framing roof
- 12" overhangs on front, back, and sides
- Birdsmouth cuts at top plate (1½" seat)
- Outlookers to frame gable end overhangs
- Roof decking: 7/16" OSB
- Ceiling joists shall be Southern Pine 2×10 at 16" O.C., tied to each corresponding rafter at the top plate to resist lateral thrust
- Collar ties (2×6) shall be installed every other rafter in the upper third of the rafter span
- Each rafter will be secured to the top plate using metal roof-to-wall connectors (hurricane ties)

Note: Ceiling joists (2×10 @ 16" O.C.) shall tie into each rafter at the top plate. Every other rafter shall include a 2×6 collar tie in the upper third of the span. Each rafter will be secured with a roof-to-wall connector for uplift resistance.

Peak Height:

- Wall height = 8'
- Rise over half-span (10') = 5'
- Total peak height = 8'+5' = 13'

Elevations

Front Elevation:

- Vinyl siding (light green)
- White vinyl corners and soffit
- 16' garage door centered
- 12" roof overhang with soffit venting

Rear Elevation:

- Vinyl siding, no windows

Left & Right Elevations:

- On right elevation 36" entry door 12' from right rear corner
- Left Solid 20' wall
- Vinyl siding and 12" overhangs
- Roof slopes at 6/12 pitch

Wall Section (Slab to Ridge)

Ridge Beam (2×8)

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/ \ Rafters (2×6 @ 24" O.C.)

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Double Top Plate (2×4)

Studs (2×4 @ 16" O.C.)

Pressure-Treated Bottom Plate

Anchor bolts into:

4" Slab w/ 6 mil Vapor Barrier

12"×12" Continuous Footer w/ (2) #4 Rebar

Electrical Plan

- 60A subpanel on rear wall
- (2) LED utility lights on centerline
- Single-pole light switch near 36" entry door
- First outlet within 6' of door
- Additional outlets max 12' apart on all walls