

Balloon Framing

Balloon framing is simply a method of framing walls which involves using studs (longer than standard length) that run in one continuous piece from the lowest floor level to the roof line. As this currently applies to HFHCAZ it is framing a section of a two story wall as a single piece from top to bottom as opposed to stacking two single story sections together.

We are being required by the City of Phoenix to balloon frame the unsupported two story walls in the entry area of the 106PH & 107PH models. For the 106PH, this means the side wall section will be 10'-0" wide and the front wall section will be 7'-2". For the 107PH, the side wall section will be 7'-0" and the front wall section will be 7'-8".

The stud length (for our purpose) will be twice the standard stud length plus the depth of the assembly of the second floor deck, and the depth of top, double top, and bottom plates at the second floor level. For the 106PH and 107PH models we are currently building, the stud length should be 202.75" (16'-10 3/4"). This figure is calculated by taking the ceiling height shown on the floor plan minus the first floor bottom plate and the second top & double top plates (4.25").

We will sheath these areas the same as a regular stacked wall (8' piece, filler strip, 8' piece). This means that the edge blocking for the sheathing will serve as the fireblocking, and will be placed at centerline 95.25" above the slab and centerline 93.75" below the top plate.

Garage Door Framing

When rough framing a garage door opening please verify the following:

1. That the vertical framing members (trimmers/posts) are set back $\frac{1}{2}$ " from the end of the stem. This will give a horizontal opening of 16'-1".
2. That the inside edge of the wing walls are flush with the inside of the stem wall
3. That the height from the garage floor to the bottom of the beam is 84 $\frac{1}{2}$ or $\frac{3}{4}$ "+
4. That the height from the garage floor to the top of the double top plate is 101"+

Once all of the above conditions are met, install a 2x6 on the inside wall around the rough framed opening. This is called a "buck" and is used to attach the garage door to the wall. The horizontal and each of the vertical components of the buck must each be made from a single piece of 2x6. Install the buck using 16d nails driven at alternating angles. Do not put nails in at a 90 degree angle. Use rows of three nails, no more than 12" apart to install the bucks. At the top of both vertical bucks and on the spring pad add extra nails so that the top 24" are nailed at 6" O.C.

The vertical pieces of the buck run from the top of the double top plate to within $\frac{1}{2}$ " of the floor (1" maximum). All three buck pieces also must extend into the door opening $\frac{1}{2}$ " to serve as the stucco stop. Install a vertical 2x6 (called the spring pad), exactly in the middle and from the top of the horizontal buck to the top of the double top plate, at 96" if a 16' door. The 2x6 board must be clear and non-checked, meaning no knots and no cracks that look as if the wood is splitting.

The vertical bucks must be nailed into both top plates. The intersections of the various buck pieces are to be toe-nailed together.

Key Notes to Remember:

- Never set door bucks on top of stem walls.
- Height of the stem should be 5" unless stated otherwise in plans.
- Measure slabs before starting framing (concrete folks may have taken off up to 2" from front of garage).
- Do not put nails in at a 90 degree angle.
- 0 degrees is what the wall may be out of plumb/level.
- Always allow $\frac{1}{2}$ " minimum to $\frac{3}{4}$ " maximum for stucco.
- Rule of 66
 - o From floor to the wire for the wall button should be no less than 66"
 - o The wires dropping down from the ceiling should be no more than 66" from the floor.
- The wall button should be at least 2' from the shoe bench or water heater platform (per child safety law).
- Minimum 101".

Scuttle Hole Framing

Install the scuttle hole as soon after truss installation as possible. This keeps all subcontractors from blocking access to this space.

- LOCATION OF ATTIC ACCESS VARIES PER HOUSE PLAN. CHECK WITH THE STAFF FOR THE CORRECT LOCATION

- The minimum rough opening of the scuttle hole is 22½"x30".

- **Code requires a minimum vertical clearance of 36" above the hole.**

- The bottom chords of the trusses form the bottom piece of the sides of the scuttle hole.

- The bottom piece of the end is made from a vertical 2x6, the bottom of which is installed flush with the bottom of the truss chord.

- The top piece of the sides is a 2x6.

- The top piece of the ends is a 2x4.

- The top and bottom pieces can also be connected with a gusset plate of OSB located on the OUTSIDE of the opening.

-

-

Scuttle Hole Trimout

Our method for finishing/trim on our scuttle holes has been changed by the City of Phoenix inspector. We are no longer allowed to have any exposed wood around the opening. Therefore, we will now use a 3" piece of drywall instead of the 1x3 and will use conerbead instead of baseboard for the trim. In other words, wrap it like a window opening.

The lid remains the same, a piece of sheetrock backed by a piece of OSB.

Sealing the Air Envelope

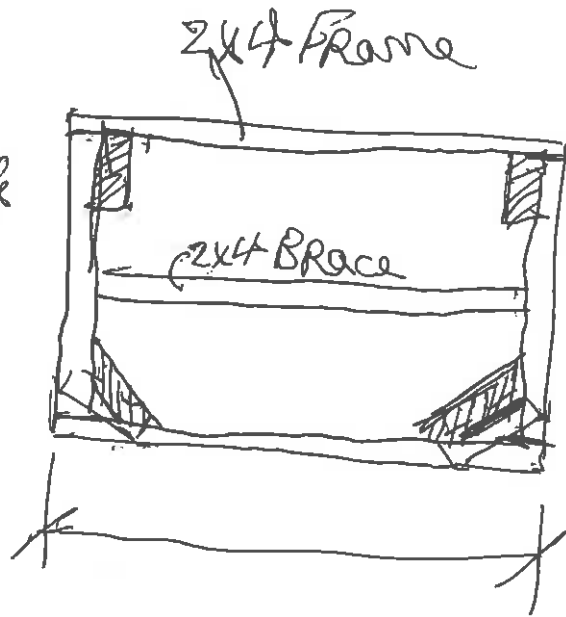
To comply with EnergyStar and LEED air tightness requirements we need to seal all of the locations where the edge of a sheet of OSB is attached to a framing member with caulk. This applies to all locations where one side of the wall is a conditioned space and the other side is not.

What this means is that we will run a bead of caulk along the 2x framing/OSB contact point at the following locations:

1. At all locations where OSB joins a bottom plate
2. At all locations where OSB joins a top plate
3. At all studs & posts (both sides) where two sheets of OSB join. In a perfect world this would occur every four feet, but in reality it can be anywhere

SHOE REMOVAL BENCH

Top is
24" Skate



Front Leg = 2x4
45° cut x 2



Stair Framing

Before installing the stringers, attach a 3' wide piece of ½" OSB along the lower outside edge of the two outside stringers. When the stringers are installed, this will create a space between the stairs and the walls into which the drywall will slide. We will no longer be using the MDF trim (kickboard) insert, and per the City of Phoenix we are now to install the permanent risers and treads at this time. Temporary treads will no longer be accepted.

The riser should be installed first so that it drops behind the tread. This allows the joint to be reinforced by gluing and driving nails through from the back of the riser into the tread. The joint between the top edge of the riser and the tread is also glued and nailed.

If the tread is at least 11" it is not required by code to have a nosing (overhang). However, *we will have a nosing on all stair treads.* The nosing must be between ¾" and 1 ¼".

The other change to stairway construction is that any "free" walls (the short lower walls in the 106 & 107 models) are to have a let-in brace inset into the studs to prevent these walls from twisting (this was a problem on several houses previously).

Hand rails will be installed during the Trim phase of construction.

Stairway Railings

The handrail height should be 36" at rake and 42" on the flat. The rail must run continuously from directly above the lowest riser to directly above the highest riser, and is required on one side of the stairway. Support brackets cannot be more than 48" apart. Determine the location of each bracket (it must be at a stud or blocking). Remove a piece of drywall the size of the plinth block and install the block in its place. Caulk all gaps and paint the block areas. Install the brackets onto the plinth blocks and studs using at least a 2 1/2" "gold" drywall screw and then install the railings using the screws provided.

There must be a return (the rail turned perpendicularly into the wall) at each end of all rail runs. Make sure that all joints in the railings are securely connected.

Finish the rails using water-based polyurethane.