



## Wall Framing Construction Steps

### Wall Foundation & Sub Floor - Cutting up the Pieces

1. **Form removal (see samples 1 & 2)** - Remove your sample foundation wall top piece from your form by removing screws from edges and bottom and put back, take plastic off, add rubber feet by cutting provided rubber mounts in half and attach to bottom four corners, using black permanent marker put group names on narrow edge, and clean-up your area (your form should be 5.5" by 17.5" by 2" with anchor bolts 2 to 2.5" above concrete top)
2. **Sill plate (see sample 2 & 3)** - cut a 2\*6\*1.5" framing board (2\*6) 17.5" long, drill 1/4" clearance holes to align with wall anchors/concrete wall foundation top, and cut 17.5" piece of the pink foam sill plate gasket to put between top of foundation wall and sill plate
3. **Rim joist (see sample 4)** - cut another 2\*6 17.5" long to later attach to floor joists
4. **Floor joist (see sample 5-6)** - cut two 2\*6's, one at 37.5" long, and the other about 8" to be later cut on a compound 45° angle to match plywood sub floor diagonal cut
5. **Sub floor (see sample 7-8)** - minimize waste of plywood by laying out and cutting a 3/4" plywood standard sheet 22\*47" and then cutting on the diagonal (use straight edge and clamps for clean cuts) to be left with two 8\*3.5" waste pieces, see step 7b for a graphic link explanation
6. **Base exterior wall plate (see samples 5-6)** - Cut 2\*6 18.5" long
7. **Base interior wall plate (see samples 5-6)** - cut 2\*4, 33.5" (39" full length minus base exterior wall plate thickness 5.5")
8. **Testing fit (see sample 5-6)** - Put all your pieces together including your concrete foundation wall, using a couple of temporary blocks under the ends of the floor joists to ensure all parts fit together (note the sample wall studs you will be placing later in this project)



W.F. sample 1



W.F. sample 2



W.F. sample 3



W.F. sample 4



W.F. sample 5



W.F. sample 6



W.F. sample 7



W.F. sample 8

### Wall Foundation & Sub Floor - Putting the Pieces Together

1. **Floor joists stands, (see sample 9-11)** - measure the height needed to support both joist ends, the short and long one, cut two 2\*4's that length and toenail both to bottom of each joist for joist support (Tip - be careful to not split the wood, and use a nail anchor to prevent wood sliding)



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2. **Sill to rim and floor joist, (see sample 12-14)** - nail rim joist to sill plate from below (normally toe nailed) with three nails and put starter nails in for both floor joists, then flip upside down and put two starter nails into bottom of sill plate and use carpenters square to ensure floor joists are 90° from rim joist, then finish hammering nail in from bottom of sill plate, then finish hammering in rim joist nails into floor joist, then do the same for the other joist
3. **Sub floor to rim and floor joist, (see sample 5 for app. visual)** - using the black floor screws, use about 6 to screw sub floor to rim and floor joist making sure plywood overlaps the straight long edge while the other two straight edges are flush
4. **2\*6 Base/top exterior wall plate plumbing layout, (see sample 15-18)** - layout with pencil where wall studs are, and corner 2\*4 corner blocking, then find mid-point between them and mark centre (should be half of 5.5") for the 1.5" drain pipe, then measure over 3" either side for hot and cold 1/2" pex flex pipe centres and cross mark 1" from inside edge, then cut a second 2\*6, 18.5" for your exterior top wall plate and layout the same
5. **2\*6 Base/top exterior wall plate plumbing hole cutting, (see sample 15-18)** - for the top plate you are to drill right through and for the base plate only drill 3/4" into the top, for the drain pipe which you will drill a 1-7/8" using a forstner bit, and for the two 1/2" water feed pex pipes use a 5/8" spade bit (also commonly known as a speed bit)



W.F. sample 9



W.F. sample 10



W.F. sample 11



W.F. sample 12



W.F. sample 13



W.F. sample 14



W.F. sample 15



W.F. sample 16



W.F. sample 17



W.F. sample 18

## Creating the Partial Wall Frames

1. **Wall frame pieces, (see sample 19-21)** - cut your 2nd interior wall top plate also 33.5", you will need 4 2\*4 wall studs with a sample model length for this project of 12" each, and two 2\*6 exterior wall studs also 12" long
2. **2\*4 Framed wall layout, (see sample 22-25)** - starting with the 2\*4 wall place your pieces together and ensure everything fits, then take both the top and bottom plate and mark where the studs will



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be going, so you know exactly where the studs are located and where the two nails per stud are going with studs as a standard, 16" apart OC (on-centre)

3. **2\*4 Framed wall nailed together, (see sample 23-25)** - either take top or base plate and start nails where studs are, then line up studs and nail them in place, then take the other wall plate and do the same carefully nailing each piece accurately
4. **2\*6 Framed wall, see sample 20 and 28)** - following similar steps in 2 and 3, layout the two 2\*6 studs and the 2\*4 corner block, then nail into place ensuring the plumbing holes line up
5. **Walls to sub floor, (see sample 26-28)** - square up walls, then nail down both the 2\*6 and 2\*4 base wall plates down to the sub floor and joists, then toenail the top corner wall plates together where they meet



W.F. sample 19



W.F. sample 20



W.F. sample 21



W.F. sample 22



W.F. sample 23



W.F. sample 24



W.F. sample 25



W.F. sample 26



W.F. sample 27



W.F. sample 28

## Evaluation:

When working on the framing wall sample in your groups of three, you will be marked on your participation, effort, work ethics, proper techniques, teamwork,, and process. Below is a breakdown of the project sections and what will be evaluated:

Evaluation Breakdown Component Descriptions	Marks
Always double check that you have completed all components for full marks.	
Framing Handout - 📄 handout - blanks filled in, questions answered	29
Framing walls - layout, cuts, nailing, fit, square, plumb, and group work	50
Dynamic Feedback - 📄 handout – rubric self, group peer evaluations, feedback, and questions	10