100 - Floor Joist 1st Floor Hang

Materials Needed:

1. Nail gun
2. 16D sinker nails
3. Large speed square
4. 7' adjustable step ladder if foundation backfill not yet done (must climb down into excavation and then back up and over the foundation))
5. Circular saw
6. Precut rim joist, precut floor joist (TJI). Consults architectural drawings for dimensions.
7. Drawing from the truss pre-cut shop identifying each numbered rim and joist.

Most Common Mistakes:

1. If you have to cut rim joist or floor joist to length, check both ends for square before you cut. It is not unusual that ends cuts at the lumberyard are not square. You will need to square one end before you cut the other end to length.
2. Floor not square or not per the drawing dimensions.

Construction:

Before setting 1st floor floor joist and subfloor, the mudsills where set and shimmed to level. Any adjustment of the mudsill in or out relative to the foundation to get the dimensions and square spot-on should have been done. If there is a steel mid-span beam, it has been set, leveled and the beam cover attached. It is preferred that the beam pocket be grouted before the floor is attached.

If there is a step in the foundation, then it may be that some of the floor joist are mounted in hangers rather than sitting on the mud sill or sitting on a short pony wall. If yes, check with the supervisor for special instructions.

Sometimes, we get a "Fast Frame" pack of rim joist and floor joist. They are precision cut to length. If, instead, generic lengths of joist are received, you will have to cut them to length.

There are 2 ways we do 1st floor floor joist. Check with the supervisor as to which one you are to do on the current project.

A. Conventional Rim and Floor Joist on top of mudsill on top of concrete foundation

1. Before you start assembling the floor, verify the dimensions and square of the mudsills. Snap lines locating the inside of the rimjoist. Adjust these lines in or out as necessary to get the floor dimensions spot-on.
2. Make layout marks on the mudsills, indicating where the floorjoist will sit. This is usually 24" OC. There may be cases where a double joist or a LVL beam is needed to handle a point load. This will be specified on the structural drawing. As necessary, identify these special cases in your layout marks.
3. Separate the trusses and make different piles by truss length.
4. Separate the rim and identify each by length. Marking can be confusing because the ends may be marked with the number of the rim it intersects with. Double check each by

verifying its length. It is not unusual that the markings on the joist are so faint as to be not useful. You may have to improve the markings or create them on your own.

5. Using a large speed square, make layout marks on both 11 7/8 inch faces of rim for left and right side of each floor joist. The rim comes pre-marked on the top showing left and right of each joist.
6. Place the floor joists in approximately the right locations on the foundation walls.
7. If you are working on a single family detached home (SFD) or the 1st unit of a n-plex (1st), you have access to all 4 sides of the house. You can have 2 people lift and hold that rim at the right location on the mud sill and toe nail it in place. Then place the TJI on the layout marks, nail to the rim joist (one nail in top and bottom) and nail to the mudsills and beam cover (one nail on each side).
8. If you are working on the 2nd or later unit of a n-plex, you will have to temporarily support this rim joist about 2 feet in from the common wall. Attach Simpson A5 clips in-between each floor joist location using tico nails. After attaching the TJI to that rim joist for that common wall, slide the assembly into place. Nail these A5 clips to the mudsill, Nail the TJI to the mudsills and the center beam. Nail the rim joist on the opposite side of the TJI.
9. If work on adjacent units somehow got out of order, you may find you have firewall on both sides of your work. If that is the case, installing the rim joist and floor joist will be considerably harder. Consult the site supervisor for guidance.

B. Floor Joist hung in hangers

When we want to lower the 1st floor while retaining the benefits of a higher foundation (primarily for drainage), we mount Simpson hangers to the mudsill, hanging down into the foundation. Then, we put each floor joist into its pair of hangers

1. When the mudsills where set, if there were any places where the foundation bulged beyond the mudsill, the foundation should have been chiseled back to make them flush. If there were any places where the mudsill extended past the foundation, a divot should have been cut in the mudsill to make them flush.
2. If there is a center beam (and beam cover), verify it is set to be flush with the bottom of the hangers. This is so that the floor joist ends will sit in the hangers and the middle will bear on the beam cover.
3. Make layout marks on the mudsills, indicating where the floorjoist will sit. This is usually 24” OC. There may be cases where a double joist or a LVL beam is needed to handle a point load. This will be specified on the structural drawing. As necessary, identify these special cases in your layout marks.
4. Attach the hangers. Use a scrap of floor joist to squeeze the hanger so that the top and bottom of the hanger are the width of a joist. Insure hangers are well attached – they will be bearing the full weight of the 1st floor of the house.
5. It is typically the case that each TJI be custom cut to the length for each position. There is enough variation in the width of the inside of the foundation from station to station as to require each TJI be custom cut.

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6. Cut each truss to fit. Install in the hangers
7. Nail the trusses to the center beam cover. One nail on each side of the truss into the beam cover.

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Safety

44	Struck By	Nail gun	Safety Glasses Required All guns must be in single shot mode. No bump fire guns Air hose must be disconnected during any servicing, unjamming, etc Never shoot toward yourself or anyone else. If you must hold one of the pieces of wood being nailed together, be sure your hand is at least 1 ft from the shooting tip of the gun
46	Struck By	Power tools sawdust or other objects shot toward eyes	Safety Glasses required with any power tools
47	Tools - Hand and Power	Circular Saw - wood propped between 2 supports, cut in the middle, blade is pinched, kickback causes injury	When using a circular saw, short end of the cut is left to fall away. Do not make a cut in-between 2 supported ends. If someone is holding the drop-away end, he/she must lightly support it, letting it sag as the cut is made No cutting with wood propped over a worker's foot or supported by hand.
48	Tools - Hand and Power	Circular Saw - arms, legs etc too close to cut	Common practice among carpenters is to support the cut with their foot. This is not accepted practice at Habitat. Cut to be done on saw horses or otherwise supported away from body

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57	Lifting	lift too much, lift with back instead of knees, cause back strain	Site supervisor brief team to be cautious

I have heard and understood the briefings on how to use the tools required for this activity. I have heard and understood the methods we use to do this activity

Date _____

_____ Instructor Name _____ Signature

_____ Name _____ Signature