

350 - Wall Build

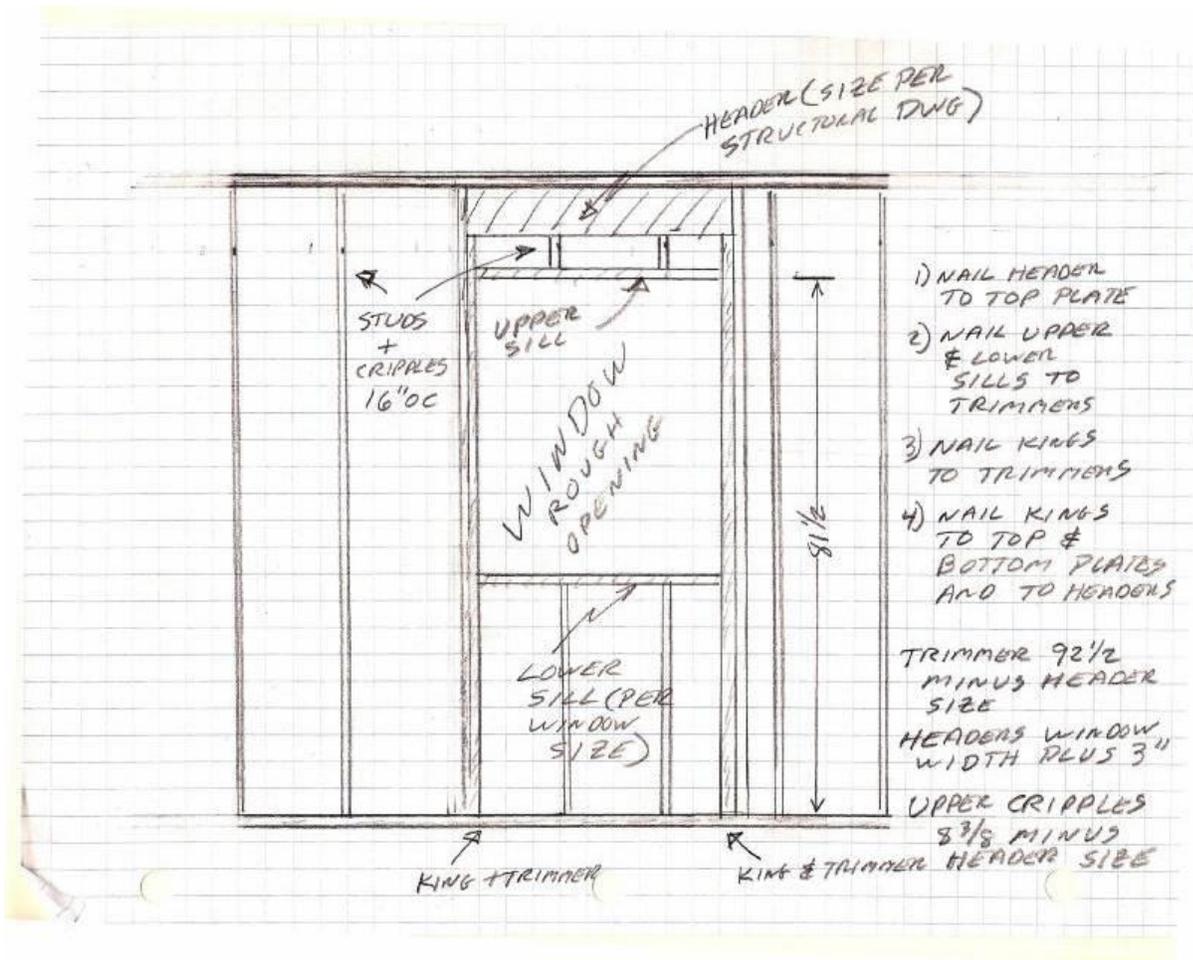
Materials Needed:

1. Nail gun loaded with 16D collated coated nails
2. Alternately, a large team with 16D sinker hand drive nails and hammers
3. Circular saw or miter saw (only needed if missing precut lumber)
4. 8 and 16D hand drive sinker nails

Most Common Mistakes:

1. Vertical stud is not flush with bottom or top plate.
2. Twisted or split studs. If one finds such a stud, throw it in the scrap pile.
3. Nailing adjacent studs next to door or window opening, before window or door opening is assembled.
4. When the wall segment bundle is separated, the top plate gets oriented in reverse from the bottom plate. The markings for studs, trimmers, etc from top to bottom no longer line up.

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Construction:

1. Exterior walls

- Before this step, wall layout will have been done. Top and bottom plates will have been cut to length. These segment numbers are marked on the floor plan architectural drawing.
- The bottom and top plates will be marked with locations for wall studs (X), king studs (K), trimmers (T) and cripples (C). Nail in components as they are marked on the plates & no more. Every excess piece of lumber decreases the amount of insulation that goes in the wall. We do 2 stud corners.
- Wall studs (X) and king studs (K) are both 92 5/8 inches and come precision cut from the lumber mill. Just find the pile of standard studs and use them for both studs and kings.
- The two exceptions to wall studs are balloon walls (a wall which spans two stories) and possible, the garage wall. The balloon wall requires studs about 20ft long. The garage may require 9 ft studs. Consult the site supervisor for balloon wall stud length.
- It is best to find a flat surface when assembling the walls. When nailing the studs into the

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top and bottom plate, ensure the face of the stud is flush with the bottom and top plate. Use 3 16D nails per stud connection 2x6 walls and 2 16D nails per stud for 2x4 walls.

- F. When constructing walls with a window or door, there will either no header or a load bearing header. The header size is specified on the structural pages of the drawing set. Headers may be different from one window or door to another. Some may be 2x6, some 2x8, some even 2x10 or LVL engineered lumber. A load bearing header is typically comprised of 2 header boards placed vertically, with 2 ½ inches of foam board sandwiched in-between. Rarely, a header may be 3 boards.
- G. When building a 2nd floor exterior wall containing a window, build the window frame separately, mark it with the wall segment number and set it aside. The frame includes the cripples, trimmers, headers and everything out to the surrounding pair of king studs. This is done so that the long, exterior wall segments do not get so heavy and are less difficult to hand-up from the ground to the crew on the 2nd floor deck.
- H. Mark wall segment numbers on the end studs at both ends of the wall. Stack finished wall segments at the location specified by the site supervisor. Make sure this stack is secure and will not fall & hurt someone. It is best if the 2x6 walls are one stack and 2x4 walls is a separate stack.
- I. The best sequence in which to build a window or door opening in an exterior wall is;
 - 1. Build header assembly and nail to top plate.
 - 2. Nail king studs to top & bottom plates and header. If double trimmers, nail outside trimmer pair to king studs.
 - 3. Build window/door buck separately. Nail top and bottom sills to trimmers. Inset this assembly into the wall, between kings.
 - 4. Nail in upper and lower cripples.

2 Interior Walls

- A. Interior walls are almost all 2x4 walls. There are a few that are 2x6 or 2x8. Typically, they are larger to allow plumbing pipes to fit in the all cavity.
- B. Interior walls are framed 24" OC.
- C. Doors in interior walls do not have structural headers or trimmers. The door rough opening consists of a pair of king studs with a upper sill and upper cripples to maintain the 24 OC stud pattern.

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Safety

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| 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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| 50 | Tools - Hand and Power | Miter saw - one hand pulling trigger on handle, other hand too close to cut zone, hand cut | If necessary, switch hands so hand holding the material is well away from blade. Do not trim very small pieces. Cut a new small piece for a larger piece that will allow you holding hand to be far away from blade. |
| 51 | Tools - Hand and Power | Defective or dull power tool | Red tag defective or dull tools. Do not put back such tools back in the POD exposing some other worker to the same risk. |
| 63 | Caught Between | Assembled wall segments may be stacked in a pile or leaned against a POD another house, etc. When interior walls are brought onto the deck before the final exterior walls are set, they get leaned against some exterior walls | Be sure these piles and stacks are safe and will not fall over on someone. If the pile of interiors is leaned against the exteriors, be sure the exteriors are well enough braced to bear this weight and will not collapse. |

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