



Construction Manual Version 2.0.4 As of August 10,2021

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Welcome to the Charlotte Region Habitat for Humanity Construction Manual. This manual describes the construction practices that are used on house builds. The manual will be revised on a regular basis through the year as edits are brought to our attention. The plan is to update the manual annually by dedicated sub-team of our volunteers based on staff and volunteer feedback!

If you have any questions or concerns with the contents of the Construction Manual, please contact **Jack M. Stein** at [jackmstein@aol.com](mailto:jackmstein@aol.com)

The chapters are arranged in the order of the process to build a house. Some of the tasks are not one by Habitat volunteers and are sub contracted out to the various trades. Insulation, Roofing, Concrete, Drywall are typically sub contracted. Plumbing, electrical and HVAC are also sub contracted out. The subcontracted tasks will appear in the Miscl section.

[Below is an overview of each chapter and the revision date](#)

## Floor Framing— updated June 24,2021

- Building wood floor with joists
- Installing the center support beam over the piers
- Installing the sill plate
- Installing the rim board
- Install the Subfloor

## Wall Layout— updated Jul 1,2021

- Mark and label the floor with the positions of the wall units
- Laying Out the exterior top and bottom plates
- Marking the exterior plates for framing components
  - Windows
  - Exterior doors
- Pre-building the exterior doors and windows components
- Crown studs and cut to length for exterior walls

## Exterior/Interior Framing— updated August 2,2021

- Exterior Walls assembly and raising
- Straighten and Bracing All Exterior Walls
- Crown studs and cut to length
- Marking the interior plates for framing components
  - Interior entry doors, closet doors
  - Walls to support plumbing
  - Walls to support cabinetry
  - Tees and Ladders
- Interior walls assembly and raising
- Measuring and installing cap plates
- Build door headers
- Install blocking for cabinets
- Remove bottom plates at door openings
- Install deadwood for drywall
- Install hurricane clips
- Install porch beams for front and rear porches
- Finish installing OSB on exterior of house
- Complete the blue board sheathing
- Windows installed
  - Flash Window Framing
  - Window Installation
  - Flash Windows with Flashing Tape
- Flash porches
- Exterior doors installed
- Insulation behind the bathtub
- Removal of temporary bracing
- Framing a 2 story home

## Painting— updated June 20,2020

- Preparation
- Priming, Painting, and Staining
- Clean-Up

## Interior Trim— updated August 3,2021

- General Instructions for Cutting and Nailing Interior Trim
  - Nail Guns
  - Setting Nails
- Installing pre-Hung Interior Door Units
- Attic opening and folding stairway installation
- Casing at exterior doors
- Baseboards

Window Stools  
Cabinet installation in kitchen and bath  
Countertops  
Shoe Molding  
Bathroom hardware  
Door hardware  
House numbers  
Fire extinguisher  
Closet shelving and rod supports

## Installing Laminate Flooring— updated August 20,2020

Prepare the Floor:  
Prepare Door Jambs  
Plan the first and last rows and cut if you need to  
Install the first row  
Install the remaining rows  
Handling special situations  
How to end flooring at a doorway  
Vinyl Laminate Flooring

## Vinyl Siding— updated June 3,2021

Siding Prep including flashing, starter strip.  
Installation of inside and outside corners; F-Channel and J-Channel  
Installing House Siding  
Installing Porch ceiling soffit  
Installing Shed Siding  
Installing Soffit  
Installing Fascia  
Installing Shutters  
Site Cleanup

## Installing Lap Siding— updated August 20,2020

Siding preparation and installation  
Trim for inside and outside corners, windows, doors, fixtures  
The first row:  
Porch, porch beam and porch roof:  
Post installation (caulk, paint)

## Exterior Trim— updated August 2,2021

Install rear porch guardrails/handrails/pickets (if required)  
Install front porch guardrails/handrails/pickets (if required)  
Build/Install crawl space Door (if required)  
Wrap front porch beams in 1x material  
Build Front Porch Columns  
Install mailbox post and mailbox

## Shed — updated August 17,2020

Building shed base and floor  
Building shed walls  
Building shed roof  
Assembling the shed including the roof framing  
Installing shed door  
Roofing and siding the Shed

## Installing crawl space door— updated August 17,2020

## Final Punch List— updated August 10,2021

## Miscl:

## Using a Water Level— updated August 20,2020

## Roof Framing— updated August 20,2020

Gable Trusses  
Lay Off for Roof Trusses  
Prep for Raising Gables  
Trusses and Gables  
Raising Gable Trusses  
Interior Trusses  
Rear and Side Door Roofs  
Fascia Boards

- OSB Nailing Strips
- Extension Ladder Setup
- Roof Sheathing
- Bottom Chord Bracing
- Diagonal Bracing
- Attic Floor
- Roofing Felt
- Drip Edge
- Prep for 3-Tab Shingles
  - Starter Shingle Lines
  - Parallel Starter Lines
  - Determining Parallel Starter Lines
  - Shingle Layout Chart
  - Shingle Details - Parallel Starter Lines
  - Place Shingles on Top of the House
  - Starter Shingles
  - Shingle Exposure
- Architectural Shingles
- Step Flashing
- Vent Boots
- Ridge Vent and Ridge Cap

## Insulation — updated August 20,2020

- Energy Star Ratings
- Caulk Bottom Plates of Exterior Walls
- Caulk Corners on Exterior Walls
- Caulk Ceiling & Floor Penetrations
- Insulate Around Windows and Doors
- Insulate Exterior Walls
- Check Insulation Behind Shower Unit(s)
- Install Polyethylene Vapor Barrier on Walls
- Insulate Under Attic Floor
- Install Cardboard Baffle Boards
- Insulate Crawl Spaces
- Install Vapor Barrier in Crawl Space

## Drywall — updated August 20,2020

- Working With Drywall
  - Mark Locations of Studs, Trusses & Electrical Boxes
  - Plan the Layout
  - Install Ceilings Boards
  - Install Wall Boards

## Install Drywall Wraps Around Windows

### Concrete — updated August 20,2020

Driveways and Walkways

Laying out Driveways

Walkways

Slopes

Steps

Porch pads