



Construction Manual Version 2.0.5 As of February 20,2022

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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

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 February 20,2022

- 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 February 20,2022

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