



Construction Manual Version 1.0.1 August 21,2020

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Welcome to the Cabarrus 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. After the first year we will update the manual annually by dedicated sub-team of our Weekday Warriors volunteers based on staff and volunteer feedback!

If you have any questions or concerns with the Construction Manual, please contact Paul Jordan at pauljor325@gmail.com or 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 August 20,2020

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

Wall Layout— updated August 20,2020

- 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 21,2020

- 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
- Remove temporary bracing

Painting— updated June 20,2020

Preparation

Priming, Painting, and Staining

Clean-Up

Interior Trim— updated August 20,2020

General Instructions for Cutting and Nailing Interior Trim

Nail Guns

Setting Nails

Installing pre-Hung Interior Door Units

Attic opening and entry installation

Casing at exterior doors

Baseboards

Window Stools

Underlayment (Wood Floors Only)

VCT and Sheet Vinyl Flooring

Cabinet installation in kitchen and bath

Countertops

Shoe Molding

Bathroom hardware

Door hardware

House numbers

Fire extinguisher

Closet shelving and rod supports

Bathroom Hardware

Dryer vent kits

Hanging mini-blinds

Installing appliances

Completing caulking

Completing air sealing

Installing HVAC vent covers

Installing range hood

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 August 20,2020

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 20,2020

Installing aluminum capping under porch beam.
Installing posts to support the porch beam
Framing deck
Installing porch rails and pickets
Trim on double windows

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

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