CONCRETE

Approved Methods

August 22, 2020

Note to the Reader: Due to differing conditions, tools, and individual skills, the authors of this manual and Charlotte Region Habitat for Humanity assume no responsibility for any damages, losses incurred, deaths, or injuries suffered as a result of following the information published in this manual. Although this manual was created with safety as the foremost concern, every construction site and construction project is different.

Accordingly, not all risks and hazards associated with homebuilding could be anticipated by the authors of this manual and Charlotte Region Habitat for Humanity. Always read and observe all safety precautions provided by any tool or equipment manufacturer, and always follow all accepted safety procedures. Because codes and regulations are subject to change, you should always check with authorities to ensure that your project complies with all local codes and regulations.

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Forming Driveways

Charlotte Region Habitat sub contracts the concrete work to qualified contractors. This section is strictly for reference.

Tool, Equipment & Material List

Tools Each Crew Member Will Need

Hammer (16 oz. Minimum)
Nail Apron
Retractable Utility Knife (With Extra Blades)
Measuring Tape (16' Minimum)
Square (Speed or Combination)
Two Pencils
Safety Glasses
Work Gloves

Tools and equipment needed on site

Circular Saw (7¼" with extra blade)
(2) 50' Drop Cord
50' Measuring Tape
4' Level (& 6' if available)
Framing Square
Screw Gun
8# Sledge Hammer
Line Level
Torpedo Level
Shovels (2) Pointed
Ear Protection/Glasses/Hard Hats
100' Drop Cord
4-Way Electrical Box
Electric Miter Saw (10")
Reciprocating Saw (with Extra Blades)
Tamp
Pick Ax

Material List

2x4s
Re-bar stakes
3" drywall screws
String
Stakes

General Instructions for Forming Driveways
Driveways and Walkways

Laying out Driveways

1. All underground utility connections need to be in place before pouring concrete.
2. Make sure the underground utilities (phone, cable, water, gas, and electric) are clearly marked by the city in the event you plan to dig.

Property corners must be located before laying out the driveway

Perpendicular to house (pull a string straight with side of house)

10’ wide

Extend a minimum of 20’ into yard from front yard setback (allows car to park inside a fence)

Bring 10’ wide drive to within 4’ of curb

Each side of drive gets a 30" flare in its first 4’ (theoretically this results in a board cut 56 5/8" and beveled 32 degrees both ends (parallel angles). (Flare can encroach the r.o.w.)

Driveways can be up to the property line (leave a 12" margin of error).

Use the foundation for reference points when possible (so as not to compound errors).

Forms can run long in corners. Building up the grade outside will keep the concrete from running under the form.

Driveways are 10' wide. They get a 30" flare in the first four feet.

Keep drives square to the house. Stakes and splicing blocks are placed on the outside of the forms.

Cut multiple saw kerfs in forms to get them to bend around curves.

Walkways

Coming off of porch the sidewalk is 4’ wide

If the walkway turns, the section adjoining the driveway is 3’ wide

Walkways off the front porch are 4’ wide.

Stakes are used to keep the form in position.

Work with the grade so that the step up onto the porch is 7 1/2” - a typical height for a rise. In some conditions, steps will be necessary. Review with the site supervisor whether steps are wood or concrete.

Slopes

- Visualize yourself as a drop of water to check slopes. Can you escape?
- Consider the entire lot and adjacent lots for overall water runoff plan.
- Typically start at street and work towards house
- Need a minimum (per code) of 8" of foundation showing after final grading.
- Slope should fall 6" away from foundation in the first 10'. After that have a minimum of 2% (1/4" per foot) for yard and 1% (1/8" per foot) for concrete.
- Driveway at the curb should be 1 ½" above the curb (if no curb and gutter)
- First 4' of drive (the flare) should have a 4" rise from road level
- ¼" per foot in 10' is 2.5"
- Find the natural break in the slope of the drive and crown it there (Lay a long 2x4 against the dirt and see where the slope changes). Minimize number of crowns. Control joints in the driveway should be no more than 10' apart. This should be considered when the crown(s) are planned, as a joints occur at crowns.
- Stakes must be driven below form level and placed outside of forms.
- Concrete is poured 4" deep in the drive and 6" deep in first 4' off street.
- Stakes are attached to forms with 3" screws driven from outside (for easy removal)
- Use string to keep forms straight as stakes are driven
- A straight 2x4 can be used to makeshift a long level

Where the driveway meets the road, there is a 30" flare in the first 4'. An expansion joint is neatly placed on the corner.

This crew is hard at work floating concrete.

A straight edge is pulled across the top of the forms to level the concrete as it is poured. This is why stakes should not protrude above the forms.

Steps

Consider the steps when forming the walkways

Typically a step has a 7 ½” riser with a 12" tread

Build a three sided step form to sit on top of the walkway form.

The bottom front of the form is ripped back at an angle to allow for troweling

Level the form. Will need to rip its two short sides so the form sits level

Porch pads

4’x4’ pads poured centered at side door

Slope away from the house a total of ½”

Tamp down any dirt used to backfill forms