Start With

Ensure a square and level building project right from the get-go with strings and a few scraps of wood

You're finally ready to build that new deck, porch, patio, or addition. With a permit in your pocket, money in the bank, and a shovel in your hand, it hits you: Now what? How do you make the transition from concept to concrete? Batterboards. Batterboards are like bookmarks. They're placeholders for strings that describe the dimensions of a structure. You can use batterboards as a job progresses to reduce compounding error.

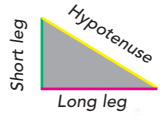
Build with screws, brace with stakes, and walk away

To keep batterboards accurate, place them safely away from construction traffic, and build them sturdily. Use braces. I usually place

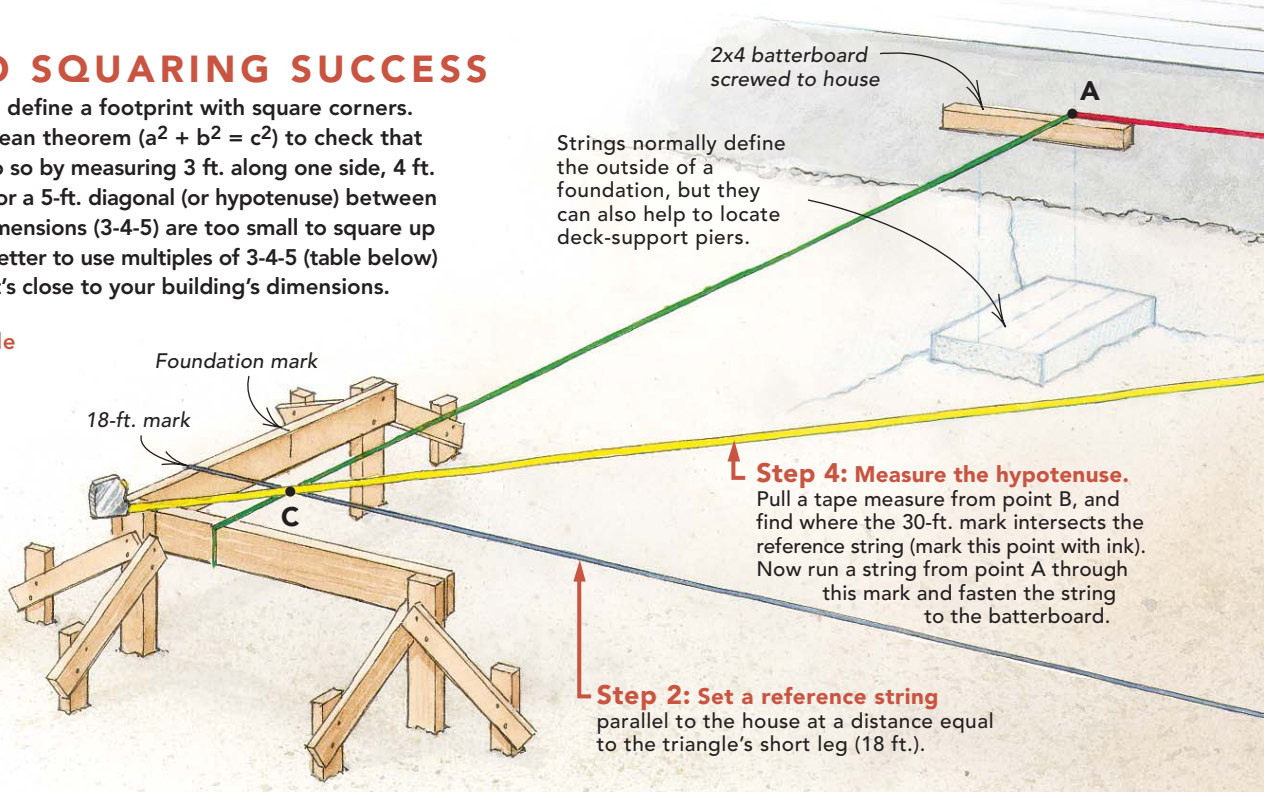
FIVE STEPS TO SQUARING SUCCESS

One goal of batterboards is to define a footprint with square corners. Most people use the Pythagorean theorem ($a^2 + b^2 = c^2$) to check that the corners are square. They do so by measuring 3 ft. along one side, 4 ft. along the other, and checking for a 5-ft. diagonal (or hypotenuse) between those two points. But those dimensions (3-4-5) are too small to square up a larger corner accurately. It's better to use multiples of 3-4-5 (table below) that define a right triangle that's close to your building's dimensions.

Step 1: Choose your triangle from this table of multiples. Select the triangle nearest to your project's footprint; bigger is better.



Short	Long	Hypotenuse
3	4	5
6	8	10
9	12	15
12	16	20
15	20	25
18	24	30
21	28	35
24	32	40
27	36	45
30	40	50



Batterboards

BY JIM BLODGETT

batterboards within a couple of feet of the foundation and discourage the flow of foot traffic with strategically placed piles of demolition debris, dirt, or lumber.

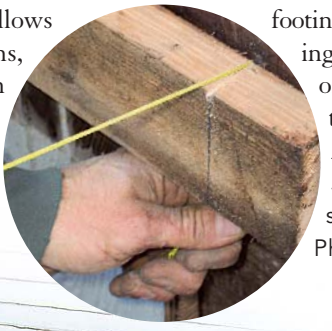
I use two types of batterboards for most small projects: a three-legged freestanding type for outside corners, and a single 2x4 screwed horizontally (and level) to the side of the existing house. Rather than nails, I use screws so that I don't loosen the braces on freestanding batterboards, which lessens accuracy. Deck screws are great for this, but drywall screws are fine.

Use a builder's level once, then leave it in its case

Installing batterboards that are level with each other allows me to use a level string to set the grade on excavations, footings, and foundations. I generally use an elevation higher than where the top of the foundation will be. I level batterboards with a water level ("Building Skills," *FHB* #161, pp. 126, 128) or a builder's level.

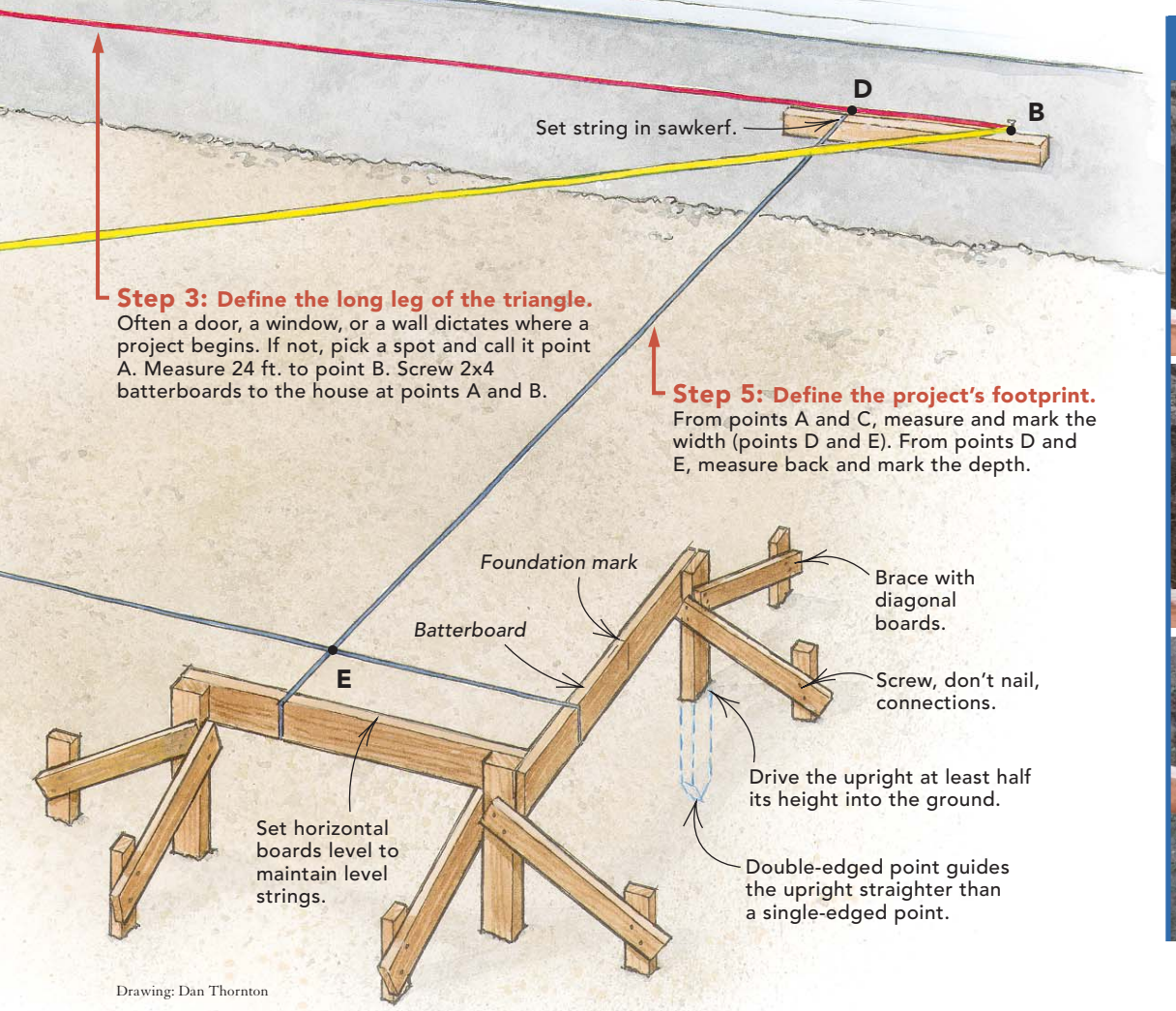
After the building lines and levels are determined and double-checked (and verified and triple-checked), I use a handsaw to score just deep enough through the top edge of the batterboard to hold the string. No matter how many marks, arrows, offsets, or elevation notes are written on the batterboards (and over the course of a job, there can be a lot), I can find the building lines quickly.

I take all measurements from these sawkerfs, and I mark them on the batterboards. In addition to the inside and outside faces of the footing and foundation walls, I lay out offsets from the building lines so that I can set up a parallel string quickly. These offset lines allow me to climb in and out of the excavation without doing the limbo to avoid lines all day. □



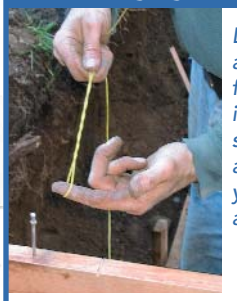
***The author prefers nylon string over cotton** because he can pull it tighter and also because it better resists fraying and breaking.*

Jim Blodgett is a carpenter in Roy, Wash. His Web site is www.asmallwoodworkingcompany.com.
Photos by Hugh Lentz.



Drawing: Dan Thornton

Quick-release knot holds string tight



Loop string around one finger, twisting that finger several times as you pull your hands apart.

Place the loop over a nail, pulling on the free end of the line while feeding the fixed end toward the nail.

When the string is banjo-tight, pull the free end back toward the nail. The twists will ball up into a knot. To loosen, pull the free end in the opposite direction.