STACK

Manual

How to build a stacked wall to reuse material and make soil.

Practice Landscape

Practice Landscape works with the living environment as designers, researchers, and gardeners. We believe that landscape is a process not a product, and that the most meaningful landscapes emerge from a strategy of working with plants first. The Manuals series can be found on our website and is open source and free to download.

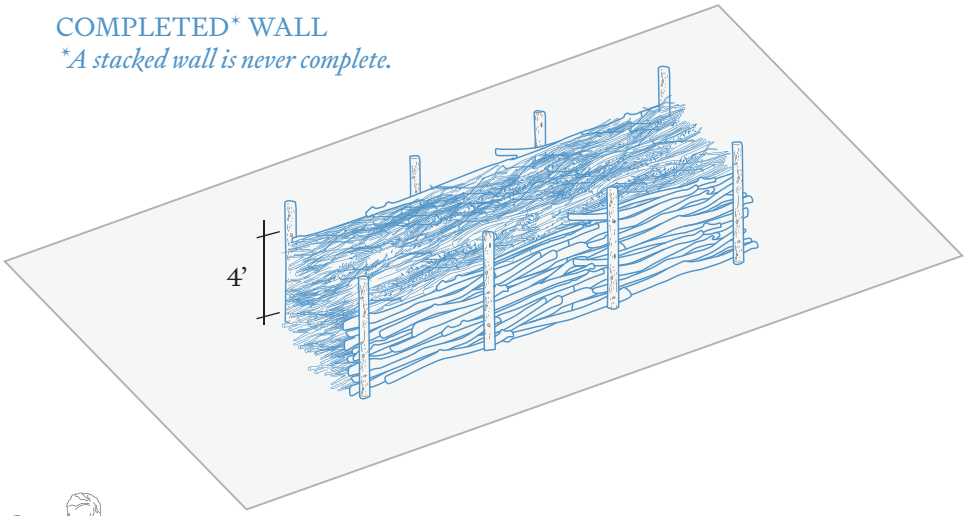
Scan and scroll down to the 'Download' section.

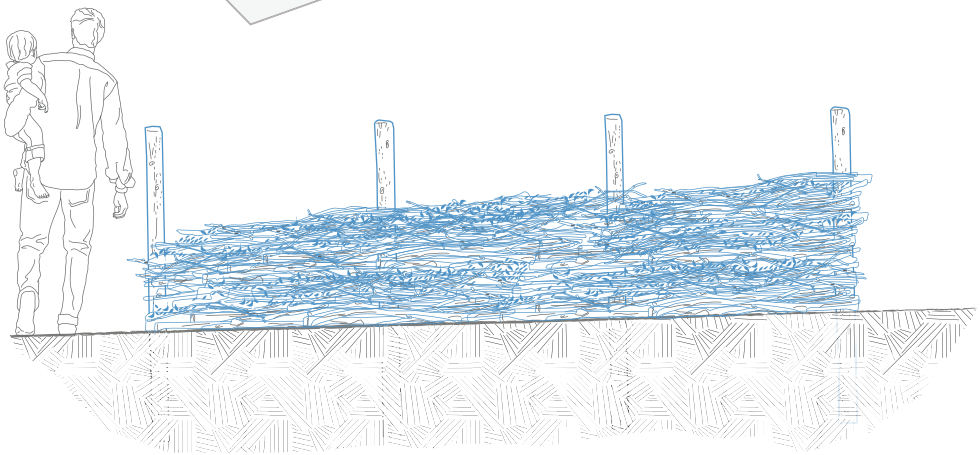
Every wall will take on its own character. Below are images from a stacked wall built in Illinios. After this wall was constructed, fill material was added as it became available, even taking on waste from neighboring sites.

Care

You can use your stacked wall for decades. Material will breakdown overtime, subsiding and making room for new material to be added every year. While the organic matter does decompose overtime, this is not the same as a compost pile and will break down at a much slower rate (couple of inches a year).

COMPLETED* WALL
**A stacked wall is never complete.*

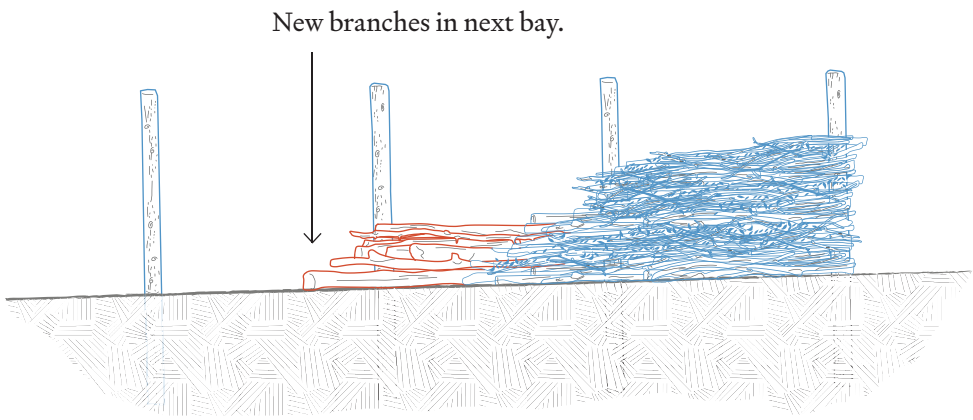


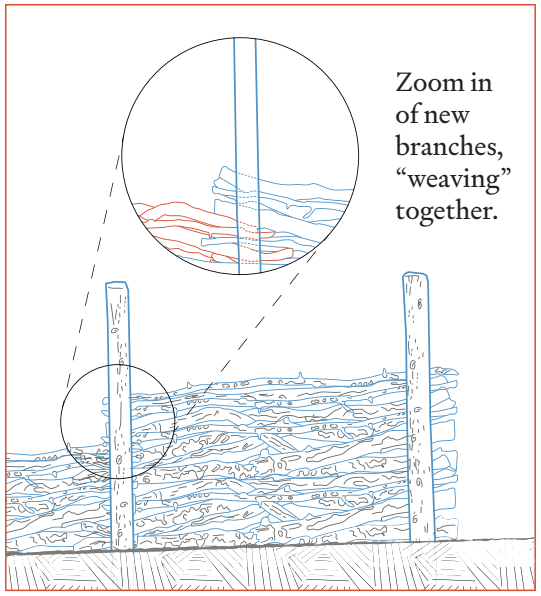


Don’t fill the wall above 4’ to avoid horizontal push.
Don’t add manure or food waste.

0 2 4 ft

J As one bay increases in height the adjacent bay should be built just a few steps behind the first. This will allow branches from one bay to overlap with the next one, interlocking branches and “weaving” the wall together.

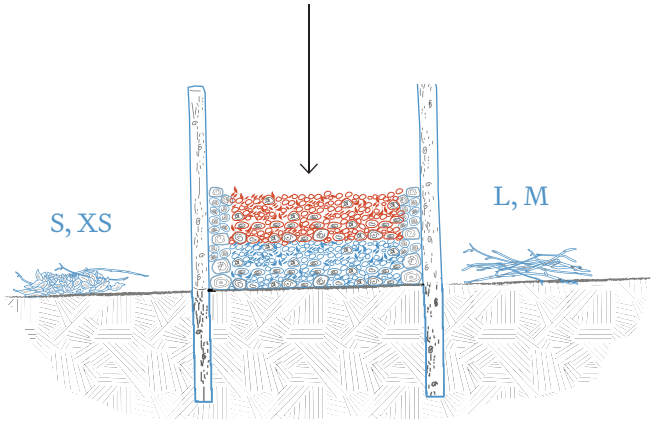




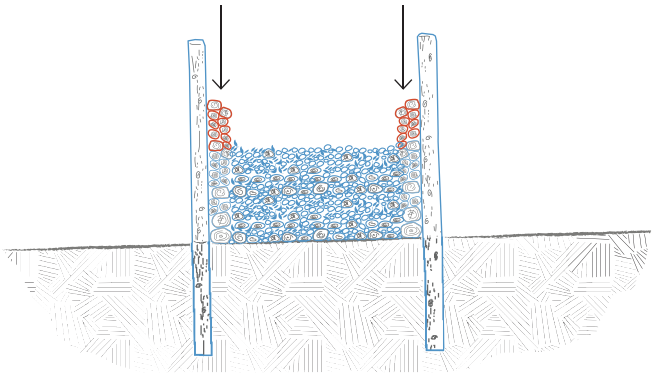
Repeat steps 02-07 until you get to the end of the wall.

0 2 4 ft

H Stack material between the branches braced against the verticals, filling the center of the wall. Add larger (L, M) and then smaller (S, XS) material in layers.



I Continue stacking and filling until you reach your desired height. We recommend a maximum height of 4' to avoid straining the vertical posts.



0 2 4 ft

About

Stacked wall

As plants are pruned or damaged, woody material accumulates on site. Rather than removing this material and trucking it offsite to be chipped or treated, a stacked wall allows it to remain on site, slowly breaking down to create new soil. To make a wall, woody material is arranged between vertical posts, establishing a seasonal practice of stacking and weaving. As small debris fills the gaps between larger branches, strengthening the wall for another layer of fill, the character of the wall emerges, and the breakdown of material fosters new life. A practice, like stacking, enriches the soil and organisms along with human connection to the land. These commonplace acts link the everyday and the transformational.

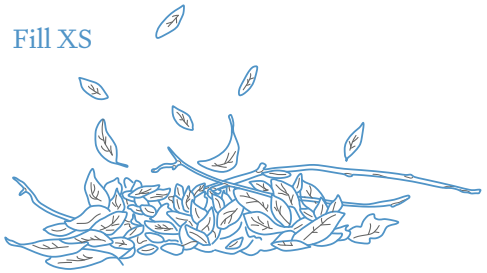
How to use this manual

This is for anyone that has excess woody material and a desire to make soil, and reduce waste and their carbon footprint. The steps that follow are simple, allowing the users to modify the design based on specific site conditions and available resources. In this manual we've collected the methods that have worked for us, acknowledging that landscape is a process and these practices are still imperfect. We invite you to make them your own.

Materials

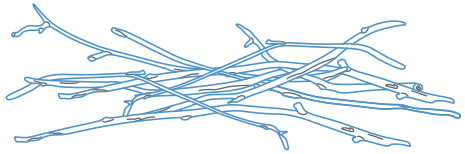
The following materials are recommended to build and fill the wall. You will need a version of each of these to complete it, but the exact material and dimensions will vary based on your site. The wall grows overtime so feel free to begin even if you don't have much fill.

Fill XS



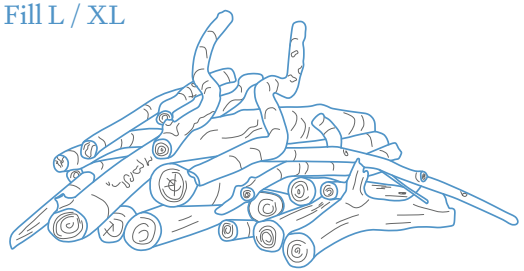
Brush (small twigs, leaves)
Size: Under 1.5" dia.

Fill S / M

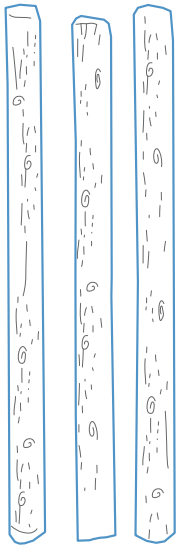


Branches (various lengths)
Size: 1.5"-4" dia. Cut forks in branches to reduce air gaps in the wall.

Fill L / XL



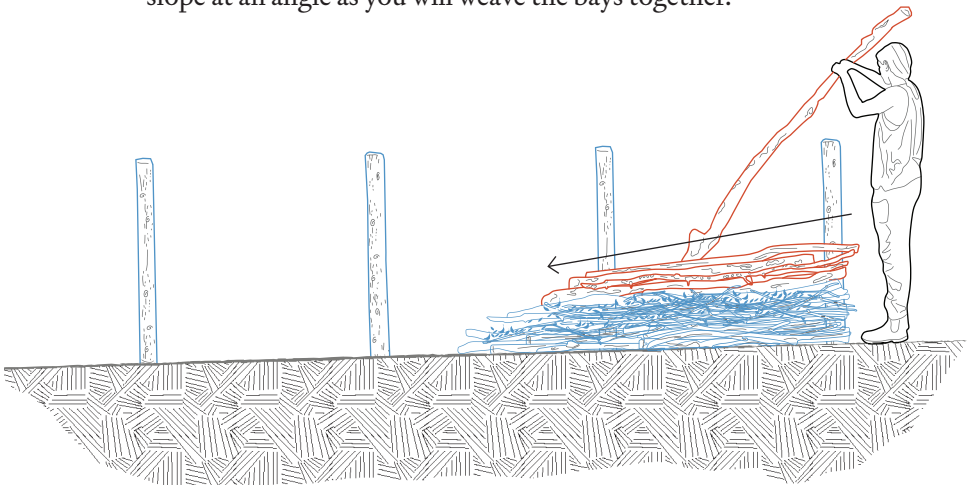
Logs (various lengths)



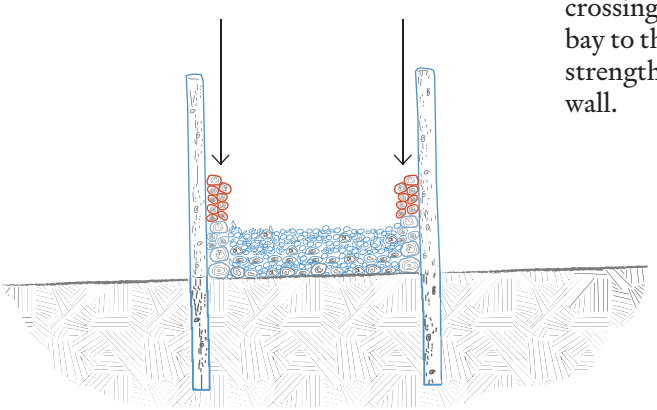
Recycled fence posts
Size: 4×4" ideal
Avg. Height: 48" aboveground.
Note: Treated wood lasts longer; untreated is preferable where there are edible plants downslope.

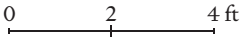
Size: 4" dia. up to whatever you and a friends can lift.
Note: Remove branches and cut at bends greater than 45 degrees.

G Stack longer branches against the interior of the posts to continue your branch framework upward, adding height and material to your wall. The fill material should always slope at an angle as you will weave the bays together.*

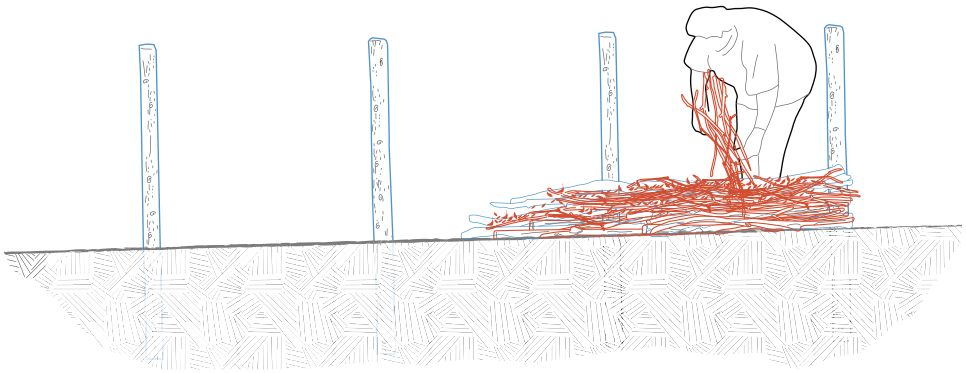


*The slope ensures material interlocks, crossing from one bay to the next and strengthening the wall.



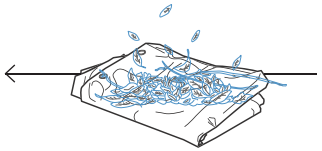


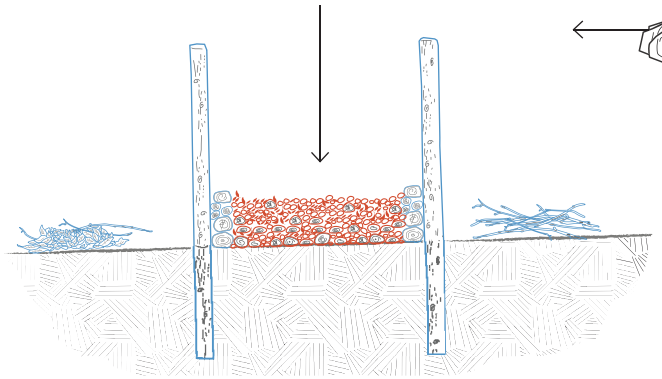
F Start to backfill with shorter branches, logs, twigs and debris (XS, S, M) between the longer branch framework (L, XL).



You can fill the interior of the wall with large stumps to create mass. The exterior branches will hide the stumps once complete.

Place material on a tarp and drag across site for easier transportation.

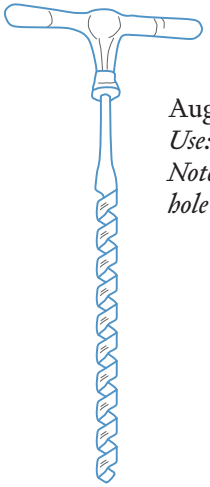




0 2 4 ft

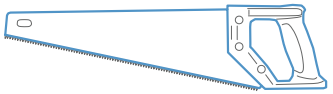
Tools

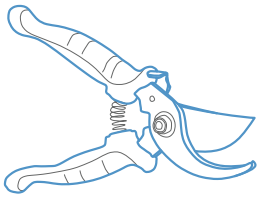
The following tools will help you build and maintain your stacked wall. The ethos for the wall is to reuse what you have on hand, so if you have something similar to the tools listed, you can probably make it work.



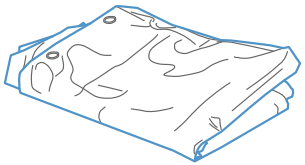
Auger
Use: Dig post holes
Note: Can also use post-hole digger.

Handsaw
Use: Cut branches, logs



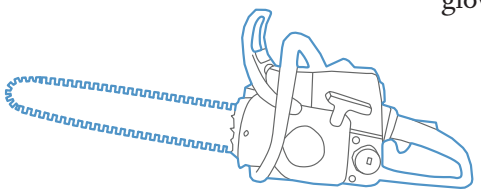


Shears
Use: Cutting branches

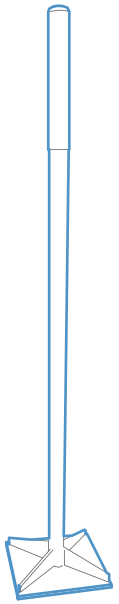


Tarp
Size: At least 6'x6'
Use: Pile and transport material.

Gardening/work gloves



OPTIONAL: Chainsaw



OPTIONAL: Tamper

Site Selection

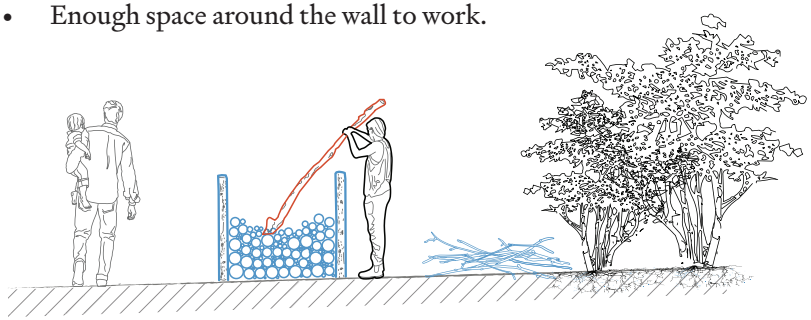
A stacked wall is suitable for many sites and climates, but there are some criteria that make it easier to build and maintain. When choosing a location on site...

Confirm the following with your local government/municipality.
**It is likely these first two will not apply if you are working on a private site.*

- *Are there any permitting requirements for digging below a certain depth or building a fence?**
- *Are there any restrictions on maximum height?**
- Is there an available site survey and utilities survey? You want to make sure you aren't interfering with any underground utilities.

Look for:

- Level site with water draining away from the wall.
- Proximity to pruned fill material to reduce transport and labor.
- Wall must touch the ground/soil.
- Enough space around the wall to work.

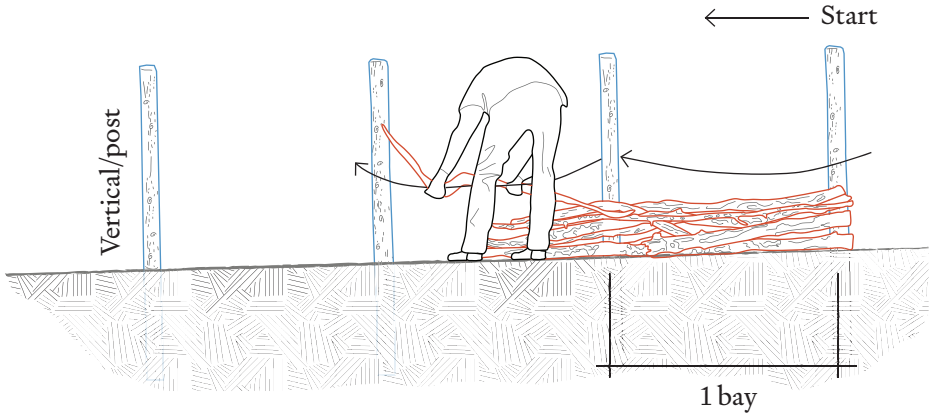


Avoid:

1. Steep slopes, hills, sharp inclines.
2. Low, wet elevations in the topography and places that collect water.
3. Placing wall immediately next to a building.
4. A location without easy access or clearance.
5. Placing posts in "hard" infrastructure (concrete, asphalt)

D Select an end of the wall to start at. Lay L/XL material against the interior of the posts, stacking a few at a time. As the first bay achieves some height, begin the next bay, allowing material from the second bay to overlap with the first.* This "weaves" the branches together, increasing stability.

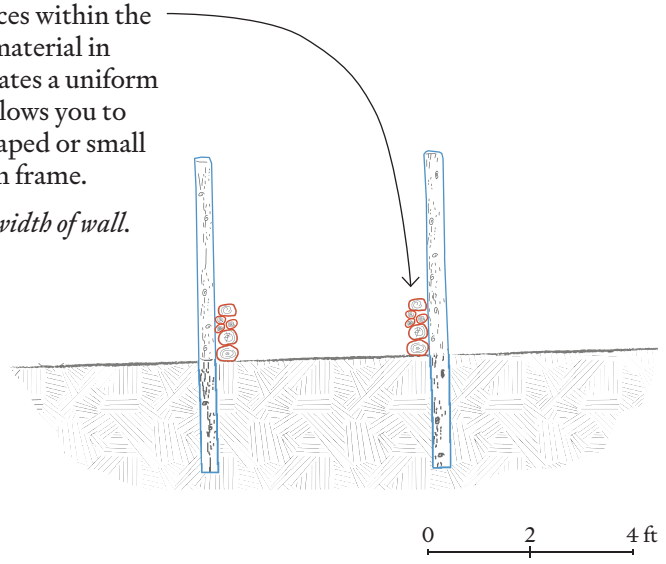
Drawing shows length of the wall. 1 bay = the distance between 2 posts.



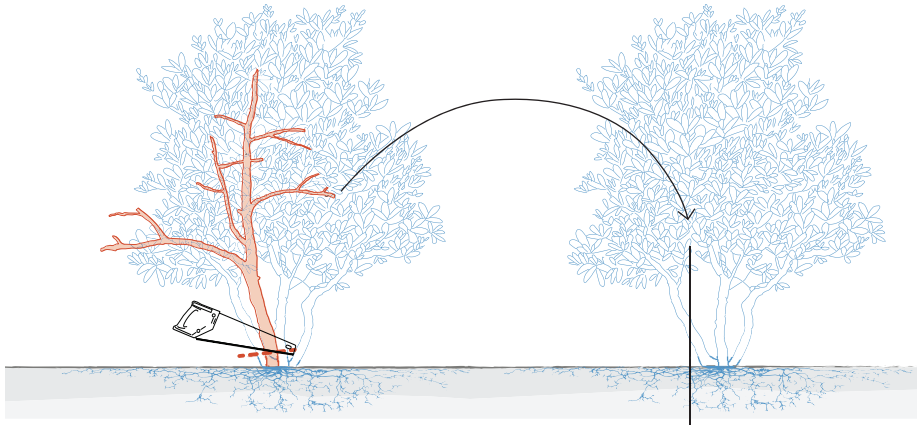
**First branches should be longer than 1 bay.*

E Brace long pieces within the posts to hold material in place. This creates a uniform exterior and allows you to stack oddly shaped or small material within frame.

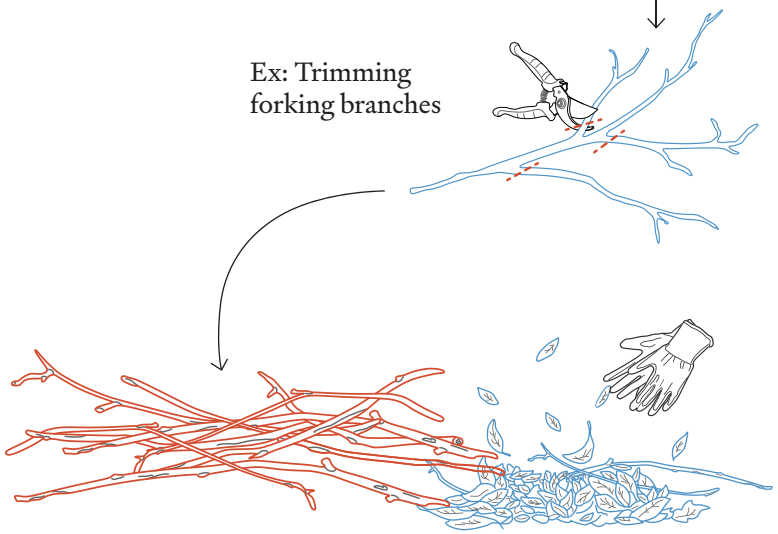
Drawing shows width of wall.



Logs, branches, and brush (fill material) can be collected throughout the year and added to the stack. Rather than dumping material as one might in a compost pile, trim forks, and separate branches. A dense and secure structure is best achieved by laying branches parallel to the wall, staggering the ends to “interlock” the branches. Layer smaller twigs and debris over large material to fill gaps before adding another layer of larger branches.

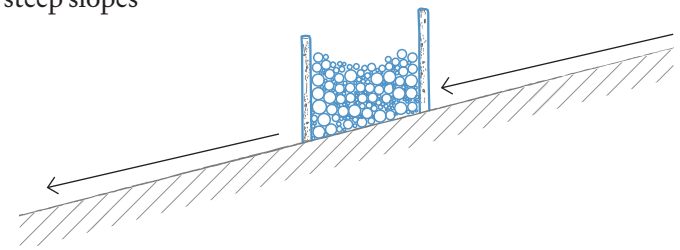


Ex: Pruning deadwood

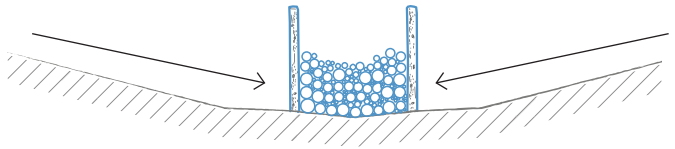


Ex: Trimming forking branches

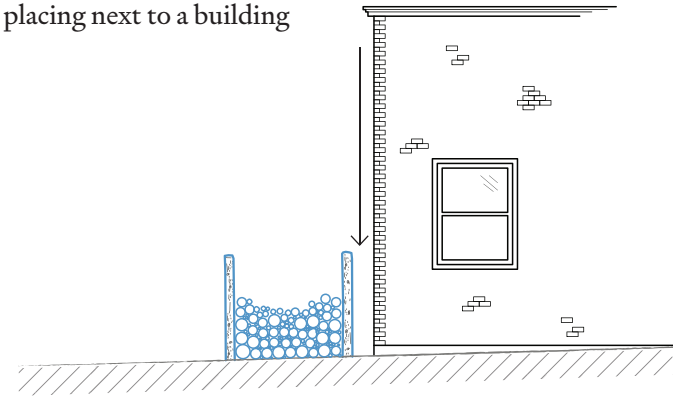
1. Avoid steep slopes



2. Avoid low, wet elevations



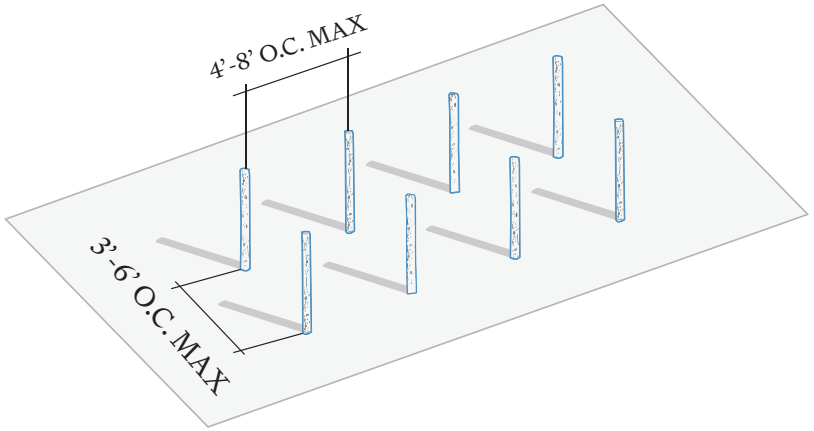
3. Avoid placing next to a building



0 2 4 ft

Design

Now that you have all the materials, tools, and a site location, it is time to start designing your wall. The wall should be longer than it is wide, typically 3-6' wide and 20-40' long. The distance between the posts will vary between 4' and 8' depending on the length of the material you have (you want material long enough to span the distance between posts). Once you've selected the dimensions, lay out the wall on the ground at the location you've selected using tape, rocks, whatever you have on hand. Always modify as needed.



Assembly

Assembly begins with installing posts, followed by placing fill material. The length of time to build the wall will depend on its size and the amount of available fill, whether it has been broken down, and how many people are working. For example, a 6'x30' wall that is 50% full will take a team of 5 approx. two full days to complete.

**Note: Frost line depth varies by climate, in Chicago IL it is 40"*

ASSEMBLY 01: SETTING POSTS

Repeat steps A-C for all posts.
After all posts are placed cut the tops to a level height for a uniform look.