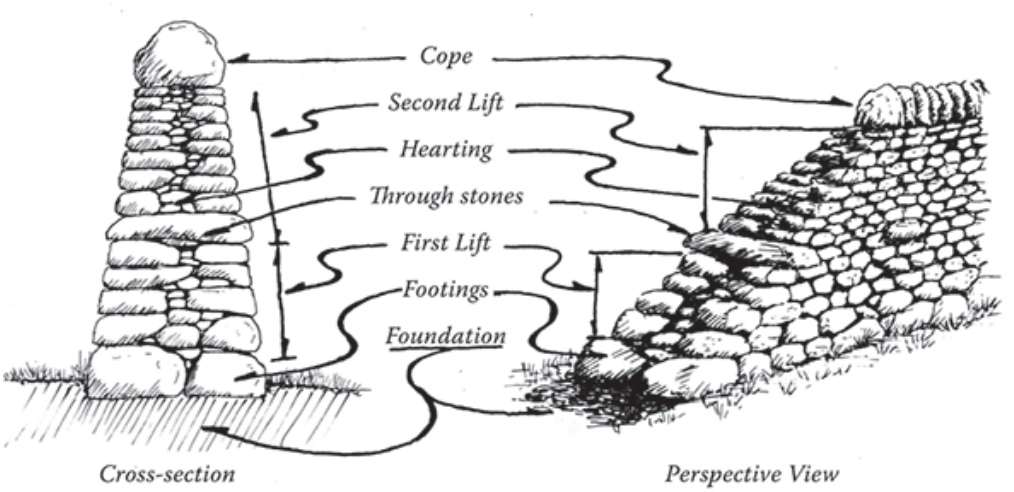
How To Build a Sturdy Dry Stone Wall

If you are going to build a wall, this is the place to start. This guide is intended to inform amateur wallers about the fundamental aspects of dry stone wall building.

Some typical uses for dry stone walls include: raised garden beds, retaining walls to create a terraced landscape, as well as stone fences for property and field boundaries.

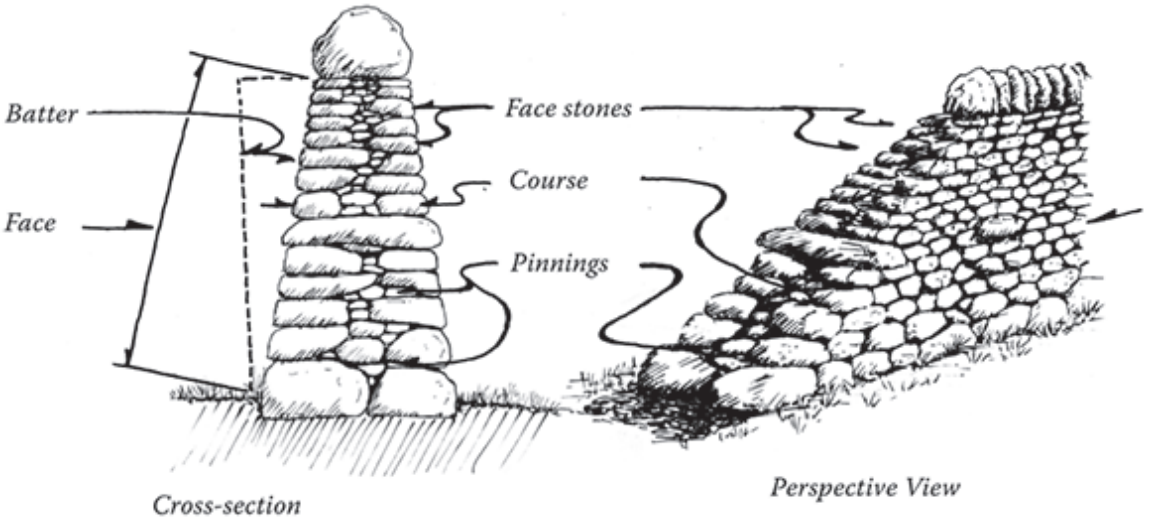
Dry stone walls can seem complex at first with all the different parts and terms. **Fortunately the basic techniques needed to build a strong wall can be condensed down to just five easy rules**. If you follow these rules, your wall will be strong and good looking.



Dry Stone Wall Terminology

It is unlikely that perfectly flat squared off stones will be right where you need them.

That's OK though, because building with stone is about you using the principles and what you have on hand. Building with stone is a problem solving exercise— your creative ability to solve the puzzles. As we like to say on the job: "The stones aren't going to move themselves."



You can build a solid structure simply using the materials right at hand if you follow these five rules.

But before we get going, a few quick safety reminders — take care of yourself and others working with you by not throwing the stones and by keeping a neat and tidy work area.

Sturdy shoes, clothing, gloves and eye protection are very important to the dry stone waller — it should be for you too. Lift with your knees, not your back, and roll materials if necessary — building is not a contest of strength, it is a contest of wit and smarts.

Take your time to stretch and breathe when you are building — standing up and looking around every now and again is helpful to keep from getting frustrated.

Now follow the FIVE basic rules of dry stone wall construction on the back of this guide!

If these rules are followed your walls should be strong and beautiful. There are also many more techniques that will make your wall even stronger, and features that can be incorporated for different purposes and situations. **The best way to learn walling is through hands on training. The best way to fully develop your skill is to work through the certification processes.** To find out more about our upcoming workshops and certification head to **www.thestonetrust.org**

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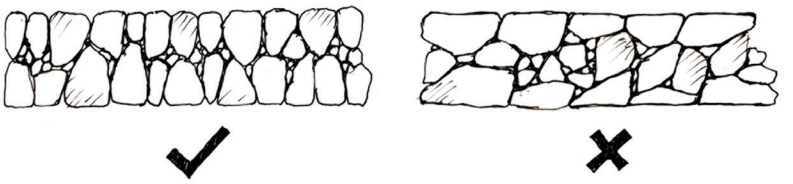
The FIVE Basic Rules Of Dry Stone Walling

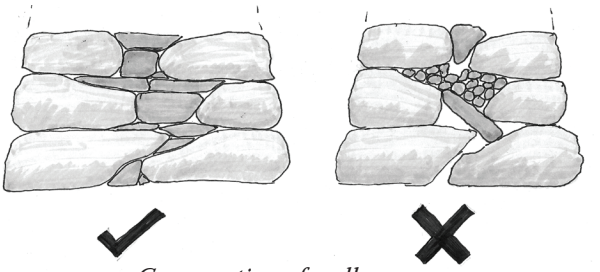
1. Set the Length of the Stone into the Wall



Course in wall viewed from above

This means that the end of each stone is the part visible in the final wall. In other words the length of each stone is perpendicular to the direction of the wall. When stones are placed parallel to the wall, so the sides are visible, it creates a much weaker wall and is called trace walling or face walling. Think of how firewood is stacked, with each piece perpendicular to the overall direction of the stack, so all you see are the ends of the pieces. A stone wall should be built the same way. Throughstones (long stones the ends of which show in both sides of the wall) are an extension of this rule, and should be placed every 3 feet at mid height to tie the wall faces together. Trace walling is one of the most common errors made, and is one primary reasons walls fall down. The images below are shown looking down on a course in a wall. Correctly built is on the left, the right is built wrong.

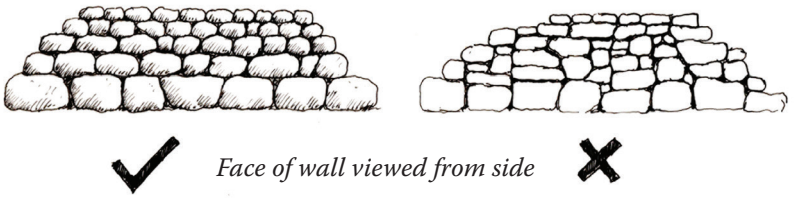
2. Heart the Wall Tightly



Cross section of wall

The wall should be built as solid as possible. Gaps in the interior of the wall, between the face stones, should be tightly filled with small stones. The tighter the hearting, the stronger the wall. However fewer larger hearting stones are much stronger than many small little bits. Anything that can be easily shoveled is too small to use for hearting (and absolutely no concrete or soil!). Hearting stones are much better if they are flat or angular. Rounded stones can act like ball bearings. Hearting stones should be placed individually, not randomly thrown in. Hearting takes place as the wall is being built, make sure each course is completely hearted before beginning the next course. Not properly hearting a wall allows stones to move independently of one another, resulting in a structurally weak wall that will not last.

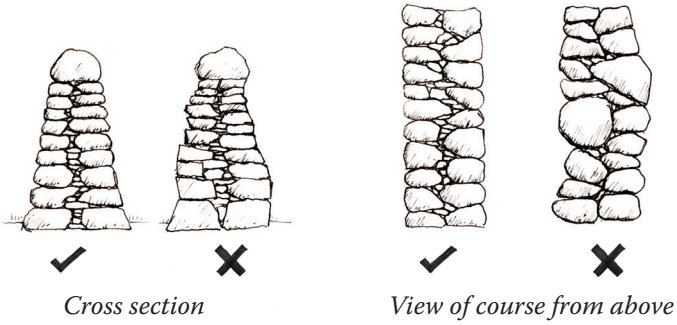
3. Cross the Joints



Face of wall viewed from side

This means that each stone should be crossing a joint below so that it is setting on two stones below it. What should not be done is to stack stones so that there are vertical joints running from one course to the next. Such joints are called Running Joints or Stack Bonds. Walls with running joints are very weak and look poor. The images to the left are looking at the face of a wall. Correctly built is on the left, the right is built wrong.

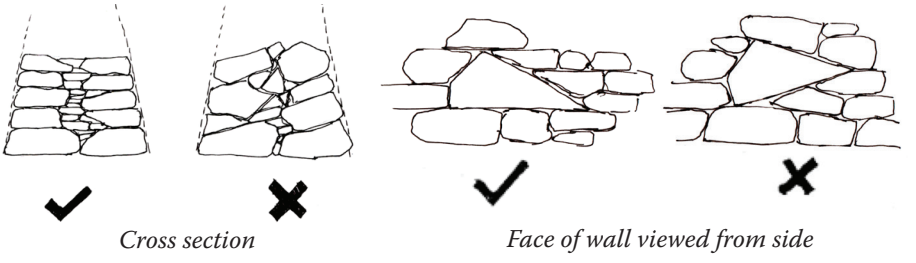
4. Build With the Plane of the Wall



Cross section *View of course from above*

This means to align the stones so that there is an even plane to the faces of the wall. String lines are especially useful to keeping an even plane to the wall. The outer most 'bump' of each stone is what should be in-line. By doing this the wall will look smooth and even when you stand back. This applies both in cross section and in each course as the images show.

5. Keep Stones Level



Cross section *Face of wall viewed from side*

Walls should be built so that the stones and courses are level. This is more apparent when using flat stones but applies to nearly all walls. Stones should be level both into the core of the wall and along the face. Stones that are not level will tend to slide causing internal stress in the wall and will eventually cause failure as the wall shifts over time. While there are a few local styles and techniques that don't follow this rule (ex: herringbone wall), it should be followed when building typical walls. This rule is especially important when building on sloping ground.