

## ESTIMATING FORMULAS

In the Product Details section for each product, there are formulas for estimating the wall and cap units as well as other materials needed to install a wall. Abbreviations for the information used in each formula are explained with the formula. There is also an example provided showing how each formula is used.

Abbreviations are explained in their first use.

Example: The total wall is 50 feet long and 4 feet high. Length (L) of the wall x height (H) = square feet (SF).  
 $50' \times 4' = 200 \text{ SF}$ .

To make the results of the formulas more obvious in each example, they have been underlined.

## BEFORE INSTALLATION BEGINS

Advance planning and careful layout at the job site help ensure a successful retaining wall project.

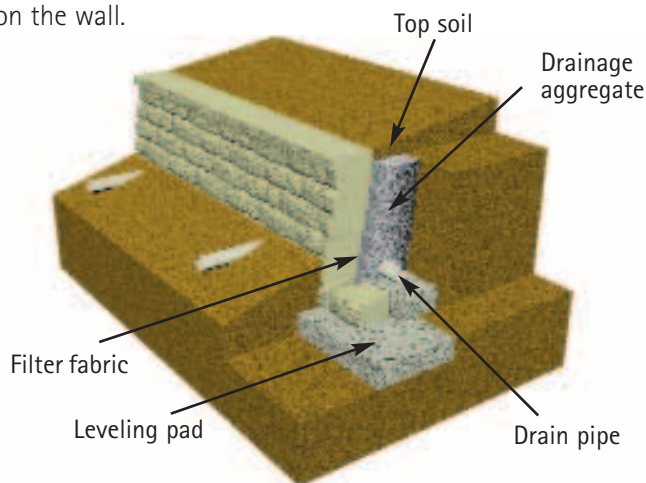
- Review the site plan to confirm lot lines, wall location, length and elevations.
- Understand on-site soils. Ideal soils are sand and gravel. For walls built in clay or poor soils, work with a local engineer to confirm the wall design and the required soil reinforcement. Black or organic soils should not be used as infill.
- Confirm the location of underground utilities.
- Seek all necessary building permits.
- Prepare a drawing of the site with the wall location, lengths and elevations.
- Plan drainage to avoid erosion or buildup of water behind the wall. Consider where the water will drain through the wall, where downspouts will expel and whether there's an underground sprinkler. For walls greater than three feet in height, a perforated drain pipe is recommended at the base of the aggregate to quickly remove large amounts of water. See page 28 for more information on water management.
- Check the block delivered to ensure it is the correct color. Check the geogrid to confirm that it's the strength and weight specified in the engineering plans.
- Be sure to use the right tools. Hand tools include a shovel, 4-foot level, dead blow hammer, 2- or 3-pound hammer, chisel, hand tamper, hydraulic splitter and string line. Power tools include a circular saw with a masonry blade and a compactor.
- Always wear protective eyewear.

## RETAINING WALL BASICS

Segmental retaining walls typically fall into one of two categories.

### GRAVITY RETAINING WALL

The first category – a gravity wall – is a retaining wall that does not use soil reinforcement. A gravity wall has height limitations specific to each product. An advantage of this type of retaining wall is that it requires a smaller work area behind the wall. A gravity wall relies on the weight and setback of the block to resist the soil forces being exerted on the wall.



### GEOSYNTHETIC-REINFORCED RETAINING WALL

The second category is a geosynthetic-reinforced wall, which needs to be designed by a qualified engineer. With a reinforced retaining wall there are (theoretically) no height limitations, and they are used in larger applications. They require more work area behind the structure. The block of soil is stabilized by introducing reinforcement layers into the soil mass behind the facing units. The larger the stabilized soil mass, the more soil can be retained or held back. The geosynthetic reinforcement in the soil extends past the theoretical failure plane and serves to create a large, rectangular mass of block and soil, restraining the retained soil.

