



FEATURING BRISA<sup>®</sup> 6" AND BRISA<sup>®</sup> RANDOM WALL SYSTEMS



# Installation Guide

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## HOW TO USE THIS GUIDE

This guide is designed to provide you with ideas as well as information on product use, estimating and installation procedures. Because actual project conditions vary, final wall design, including for the incorporation of geosynthetic reinforcement, must be performed by a qualified engineer. While this guide provides general guidelines, installation contractors should refer to construction drawings provided by a qualified local engineer for final specifications.

Additional installation information is available online at [anchorwall.com](http://anchorwall.com). Information includes basic wall construction as well as other applications, including:

- 90° corners
- curves
- various steps
- cap placement
- terraced walls
- water applications
- fences
- guardrails

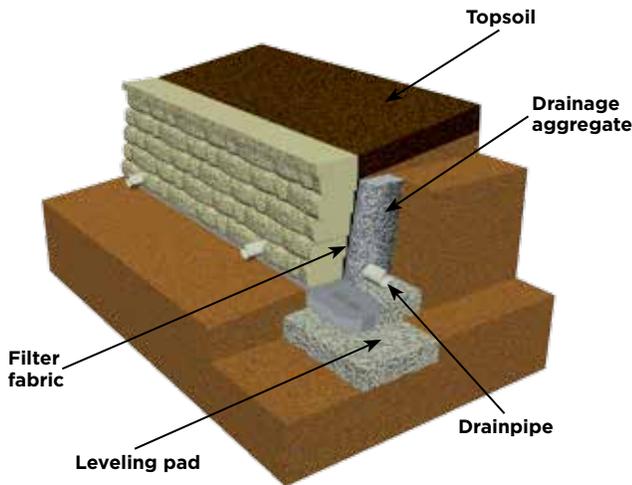
## BEFORE YOU BEGIN

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 backfill.
- 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 prevent 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 3 feet in height, a perforated drainpipe is recommended at the base of the aggregate to quickly remove large amounts of water.
- 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.

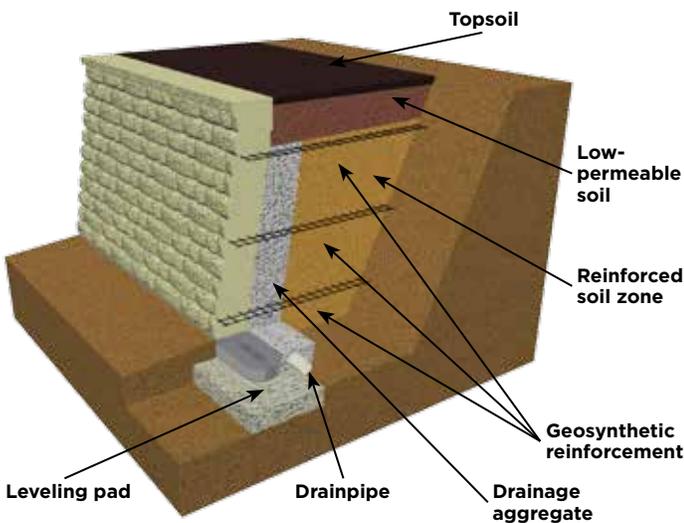
Segmental retaining walls typically fall into one of three categories.

## 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.

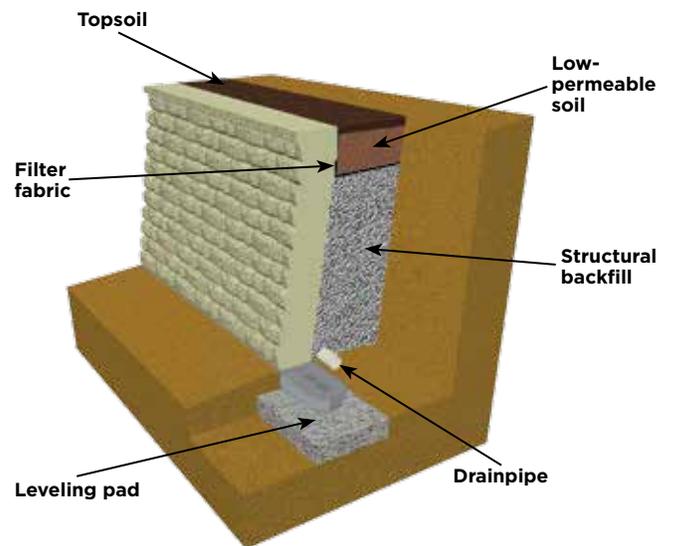
## GEOSYNTHETIC-REINFORCED RETAINING WALL



The second category is a geosynthetic-reinforced wall, which needs to be designed by a qualified engineer. There are (theoretically) no height limitations with a reinforced retaining

wall, and it is used in larger applications. It requires 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.

## ANCHORPLEX™ RETAINING WALL SYSTEM



The third category is the Anchorplex™ retaining wall system, which offers a unique, nonconventional solution to problematic wall construction sites. It is a retaining wall built with Anchor™ products and self-compacting structural backfill specified by Anchor Wall Systems, and backed by engineering support tools developed by Anchor.

Use of the Anchorplex™ retaining wall system completely eliminates the need for the construction of a mechanically stabilized earth zone behind the wall facing and requires substantially less excavation than is usually necessary in grid-reinforced wall construction.

For more information about the Anchorplex™ retaining wall system, go to [anchorwall.com](http://anchorwall.com).

# Brisa® Retaining Wall Installation Guidelines

## GETTING STARTED

Brisa® 6" and Brisas® Random retaining wall blocks are palletized in sets. One set = 2.0 sq. ft.

- Two 6" x 16" units
- One 6" x 10" unit
- One 6" x 6" unit

Installation instructions and estimating are based on using sets.

## PREPARE LEVELING PAD

Excavate for the leveling pad. The trench should be a minimum of 20 inches wide and should be 12 inches deep.

Create a leveling pad of compacted base material that extends a minimum of 6 inches in front of and 6 inches behind the wall units. This leveling pad should be at least 6 inches deep after compaction.

## BASE COURSE\*

Repeat sets for the base course. If combining Brisa 6" and Brisa Random wall blocks, pull sets from both pallets. Remove the rear lip from the blocks to be used for the base course to ensure proper contact with the aggregate base. **Pitch the base course back 1/16 inch for each foot of wall height to keep the wall level on higher courses.**

*\*The Torpedo™ base block is an option for walls up to maximum gravity height. See page 6 for guidelines.*

## COMPACTION

Keep heavy compaction equipment 4 feet away from the face of the wall and make sure you are compacting in lifts based on the capacity of your equipment. After compaction, tap the top of the blocks near the back with a rubber mallet or dead-blow hammer to ensure each lip has remained seated against the block below.

## 90° CORNERS

Corners are built by alternating corner/column units so the long side is on different sides of the wall. Build the wall from the corner unit when possible. Depending on the wall layout, there may be a need to cut wall blocks near the corner. Set back corner units to reflect the batter of the wall block units and glue from bottom to top.



## USING GEOSYNTHETIC REINFORCEMENT

For reinforced walls, use a lightweight grid such as Miragrid 2XT. It is thin and can be used in either direction for a strong wall. Use best practices for installing geosynthetic reinforcement. Lay grid perpendicular to the wall face, bringing it to within 1 inch of the wall face. Place the next course of blocks, then pull the grid tight before backfilling. Cut off the selvage edge on grid to eliminate any unevenness.

## WALL ABUTTING A COLUMN

When abutting the wall in the middle of the column face, some sculpting of the blocks will give a clean, finished look to a project. To eliminate gapping between the wall block and the column unit, mark or scribe the retaining wall block to fit the face of the column unit into the side of the wall unit. This is easily achieved with a small handheld grinder with a diamond blade.



## ANCHORPLEX™ WALL SYSTEM

**Setting out the wall and excavation** – This step is no different for Anchorplex™ system construction than for conventional construction, except that the amount of excavation will probably differ.

**Leveling pad and base course** – These steps are no different for Anchorplex system construction than for conventional construction.

**Construction of subsequent courses** – This step is no different for Anchorplex system construction than for conventional construction. Do not exceed 2 feet vertical stacking of block before placing a lift of structural backfill.

**Drainage design** – This step is no different for Anchorplex system construction than for conventional construction.

**Installation of structural backfill** – After completion of the leveling pad, base course, drainpipe installation and stacking block 2 feet above grade, the first lift of structural backfill that meets Anchor Wall Systems, Inc.'s specifications can be installed.

The structural backfill can be placed directly from delivery vehicle or with skid-type loader or other equipment. It should be placed behind the blocks and worked into all

# Brisa<sup>®</sup> Retaining Wall Installation Guidelines

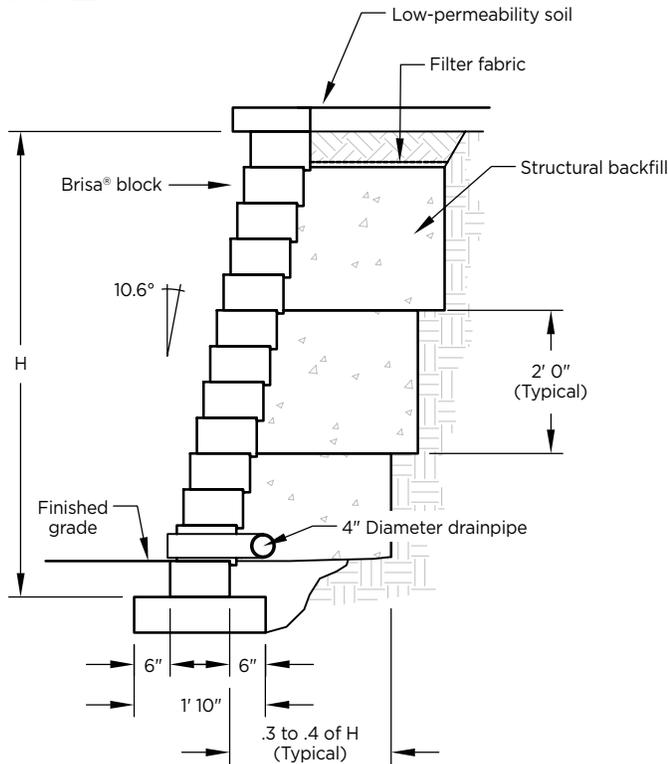
voids and cores of the blocks. When properly formulated, the structural backfill will not leak through the face of the wall.

After installation of the first lift of structural backfill, install additional courses and repeat the process. Place additional lifts from 8 to 24 inches depending on site conditions and project scale. Subsequent pours can be made as soon as the structural backfill in the previous lift has set – usually not longer than 2 to 3 hours.

**Installation of filter fabric** – Place a layer of filter fabric over the final lift of structural backfill and up the back of the top course and the cap. Then fill behind the top course and cap with low-permeability soil.

**Capping** – Follow standard practice when capping the wall.

**Finishing** – Protect the wall with a finish grade at the top and bottom.



Brisa<sup>®</sup> retaining wall system using the Anchorplex™ wall system

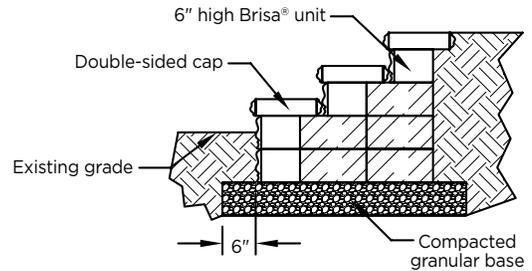
## STEPS

When constructing steps, you must consider whether it is a fill or a cut-grade situation. Construction is similar but varies in the amount of dummy units required.

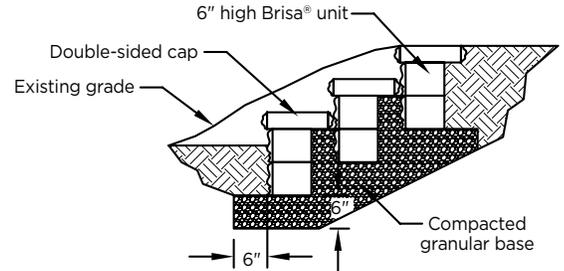
A fill step will have a base course of dummy units in the entire footprint of the steps. For each additional step, add dummy units behind the facing units for stability. There are two methods for creating the step facing. Use complete sets of 6-inch-high units. A cut-grade set of steps will use one layer of dummy blocks under each step, effectively stepping up the grade. See illustration for more details.

All applications will require some sort of tread to cover the facing units. The double-sided cap is a great option.

### Constructing steps using fill scenario



### Constructing steps using cut scenario

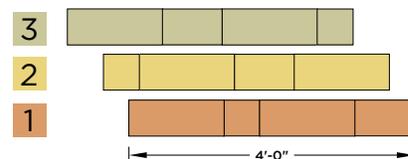


## USING A PATTERN FOR SINGLE-HEIGHT RETAINING WALLS

Estimating formulas are based on using all of the pieces of each set. When using a pattern, begin at one edge, laying all 4 units of the set and repeat. Stagger the patterns on each course as shown to avoid vertical bonds. Use random face styles intermittently with non-random face styles. If combining Brisa 6" and Brisa Random blocks, pull sets equally to maintain a proper ratio.

## INSTALLATION PATTERN

### 6" Multipiece Wall System



# Brisa® Freestanding Wall Installation Guidelines

## GETTING STARTED

Brisa® 6" and Brisas® Random freestanding wall blocks are palletized in sets. One set = 2.0 sq. ft.

- Four 6" x 16" units
- Two 6" x 10" unit
- Two 6" x 6" unit

Installation instructions and estimating are based on using sets.

## PREPARE LEVELING PAD

Excavate for the leveling pad. The trench should be a minimum of 24 inches wide and should be 12 inches deep.

Create a leveling pad of compacted base material that extends a minimum of 6 inches in front of and 6 inches behind the base units. This leveling pad should be at least 6 inches deep after compaction.



## BASE COURSE

Install the Torpedo® base block with the hand-holds down. Place blocks so the outside curve of one block fits into the inside curve of the block next to it. Blocks should touch. Level blocks front to back and side to side with a dead-blow hammer. The base course will be buried.



## STEPPING UP THE BASE

Walls built on a sloping grade require a stepped base. Begin excavation at the lowest point and dig a level trench, 24 inches wide, into the slope until it is deep enough to accommodate the base material and one entire base block.



At this point, step up the height of one block and begin a new section of base trench. Use a 6-inch-high unit on the base course to level the base unit that is stepped up. (See illustration.) Continue to step up as needed to top of slope. Always bury at least one full base block at each step up.

## WALL COURSES

Glue all courses. PL Premium® and Techniseal® RG+ adhesives are recommended for optimum performance. Those products are widely available.

Use 1/2-inch-diameter beads of glue every 3 to 6 inches apart and 2 inches from the face of the block to help keep the wall level and prevent oozing through the face.

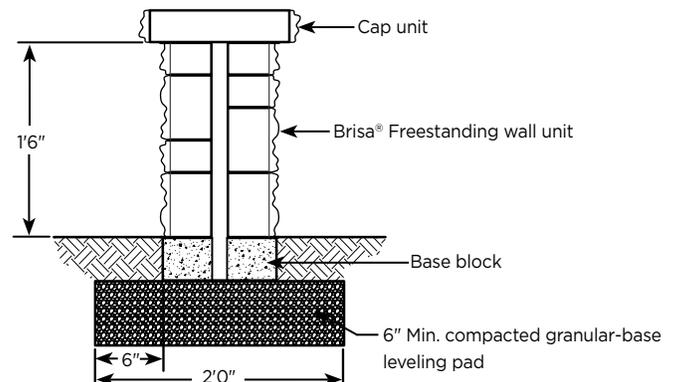


Build one layer of the pattern and glue to base units.



Build a separate wall on each side of the base unit one course at a time. Maintain a consistent gap of roughly 1 inch between the parallel walls. The width of a level can be a guide.

Continue to build one course of the wall on each side of the wall, maintaining a uniform distance between the two walls. Check horizontal and vertical levels of each wall.



# Brisa® Freestanding Wall Installation Guidelines

Periodically check the distance between the wall faces to ensure consistent spacing. Gaps will vary on curves. To avoid cutting blocks, flip blocks over on curves as needed.



## FREESTANDING WALL WITH 90° CORNERS

A freestanding wall corner could be built by putting a column in the corner and building away from it. An alternative is to alternate corner/column units and work into the pattern at the corner. Cut 2 inches off the back of the wall blocks on the inside part of the corner to make them fit. All units should be glued bottom to top.



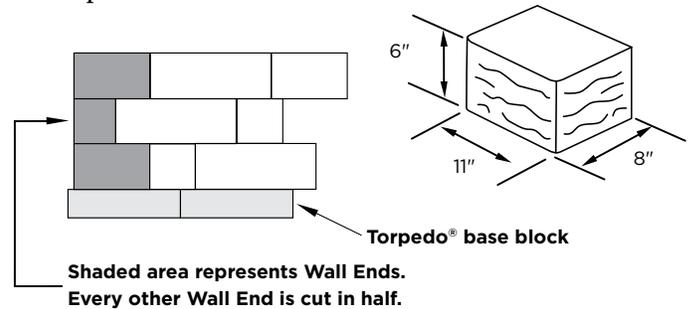
## WALL ABUTTING A COLUMN

When abutting the wall in the middle of the column face, some sculpting of the blocks will give a clean, finished look to a project. Mark or scribe the freestanding wall block to fit the face of the column unit into the edge of the wall unit. This is easily achieved with a small handheld grinder with a diamond blade. Start the second row with cut block to stagger bond.



## WALL END

Wall End units saves installation time, minimizes cutting and improves aesthetics.



## END A FREESTANDING WALL

Start pattern next to a Wall End unit if the wall does not end with a column.

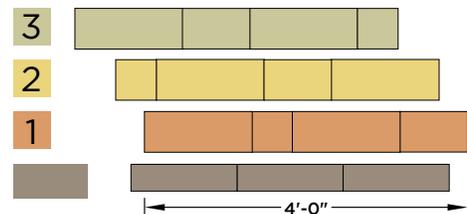
Every other Wall End is cut in half.



## WHEN TO USE A PATTERN FOR FREESTANDING WALLS

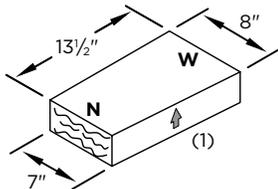
Estimating formulas are based on using all of the pieces of each set. When using a pattern, begin at one edge, laying all 4 units of the set and repeat. Stagger the patterns on each course as shown to avoid vertical bonds. Use random face styles intermittently with non-random face styles. If combining Brisa 6" and Brisa Random blocks, pull sets equally to maintain a proper ratio.

### 6" Multipiece Wall System



## GETTING STARTED

- Always start capping a wall from the lowest elevation.
- Lay out caps prior to using adhesive.
- Use exterior-grade construction adhesive to glue caps.



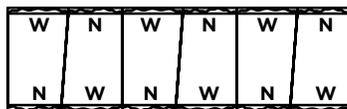
The double-sided cap has a right-angle side and an offset-angle side. The caps can be used in any of four directions since there is no specific top or bottom. There is an arrow on the side to guide capping straight walls. Just place the arrows in the same direction and touch them together as the caps are laid.

The ability to turn the cap any of four ways dramatically reduces the amount of cutting required on curves. For example, on an arc of about 25 feet, a standard trapezoidal or rectangular cap would require cutting every other cap or about 10 caps. With the Brisa® product, only four caps need to be cut. This saves time, saw wear and tear, and diamond blades.

## STRAIGHT WALLS

Alternate short and long cap faces of every other cap in order to achieve a straight row of caps. Place stamped arrows (1) on the side of caps in the same direction, either up or down, and touch them together as caps are laid to minimize the appearance of the joints.

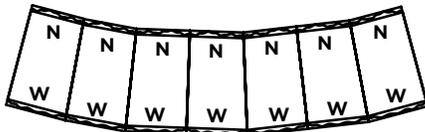
**Straight wall**



## CURVED WALLS

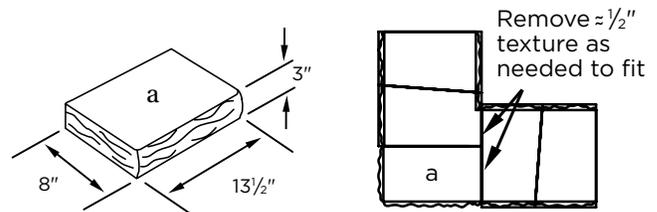
After rough fitting, cut caps to fit. Occasional cutting will be necessary for radii other than approximately 7 feet 6 inches.

**Curved wall**



## CAP END AND ALTERNATE CORNER

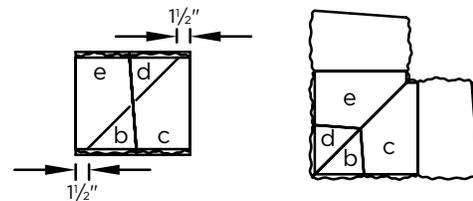
The Cap End saves installation time, minimizes cutting and improves aesthetics.



## 90° Mitered Corner

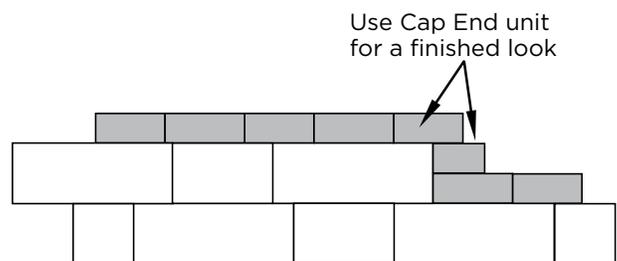
Place two caps together, arrows touching and facing in the same direction. Measure 1 1/2 inches from corners as shown. Use a straightedge to connect measurements and a draw line. Carefully cut along the line to preserve both sides of the cut.

Flip pieces "d" and "e" over to create corner.



## STEPPING UP CAPS

If a wall elevation changes, caps can be stacked where the wall steps up. Begin with a cap end at the lowest elevation and work your way back toward the previous step up. Cut a cap unit to fit. Place the cut unit directly on top of the capped portion of the wall with the cut side hidden from view.



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