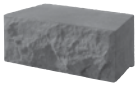
ESTIMATING FOR BELAIR WALL® 2.0 AND BRISA® - RETAINING WALL

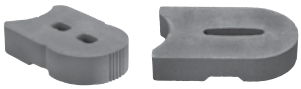
1. HOW DO I ESTIMATE FOR BURIED BASE UNITS?

Build buried base course using ***large wall units*** or ***Torpedo®/U Start Base Blocks***. Determine the length of the wall in feet and divide by either the unit length or product factor.



L ÷ unit length or coverage = _____ number of each.

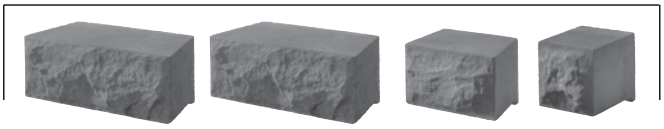
Linear feet of wall ÷ by 1.3 = _____ base blocks needed. *48 base blocks per pallet.*



Torpedo® Base Block/U Start Base Block

2. HOW MANY RETAINING WALL BLOCKS DO I NEED?

Square feet of wall divided by 2 = _____ sets needed. ***15 sets per pallet.*** Number of sets divided by 15 = _____ pallets needed.



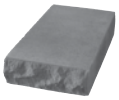
ONE SET = *2 large, 1 medium & 1 small.*

3. HOW MUCH FILTER FABRIC IS NEEDED (OPTIONAL)

Non-woven, 4- to 6-ounce filter fabric. Determine the sq. ft. of total wall.
sq. ft. ÷ 9 = _____ square yards fabric.

4. HOW MANY CAP UNITS WILL I NEED?

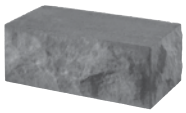
Convert wall length (L) to inches: L x 12 = _____ L in inches (LI). Cap factor (CF) = cap front inches + cap back inches ÷ 2. (Additional caps will be needed for elevation changes and curves, factor 10%.)
LI ÷ CF = _____ caps.



2-sided trapezoidal cap unit

5. HOW MANY CORNER/COLUMN UNITS DO I NEED?

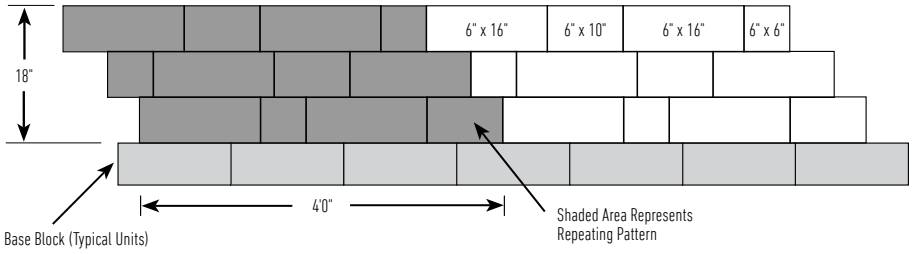
Height of column in feet divided by 8 = _____ of units needed. *28 Corner/column units per pallet.*



2-sided corner/column unit

LAYING PATTERN GUIDE FOR MULTI-PIECE RETAINING WALLS

USING A PATTERN FOR SINGLE-HEIGHT RETAINING WALLS



When using a pattern, begin at one edge, laying the units as indicated. Install at least one repeat of the pattern to establish the pattern before proceeding to the next course. Stagger the patterns as shown to avoid vertical bonds.

One set of 6-inch-high retaining wall blocks consists of 2 large units, 1 medium unit and 1 small unit, and is 2 square feet.

6" Multipiece wall system, 18-inch by 4-foot pattern = 6 sq. ft.

Blocks required	
6 Sets	
12	6" x 16"
6	6" x 10"
6	6" x 6"

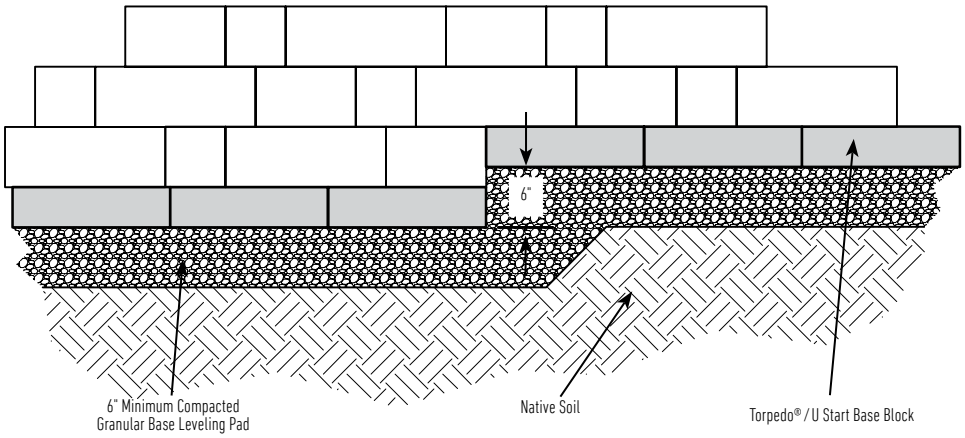
Blocks required	
3 Sets	
6	6" x 16"
3	6" x 10"
3	6" x 6"

STEPPING UP THE BASE AT LOWEST POINT

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

STEP-UP

At this point, step up the height of one block and begin a new section of base trench. Continue to step up as needed to top of slope. Always bury at least one full unit at each step.



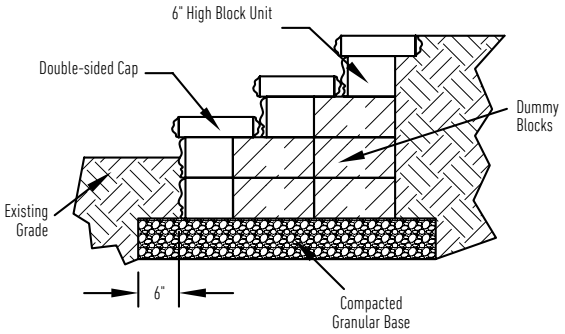
STEP CONSTRUCTION

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.

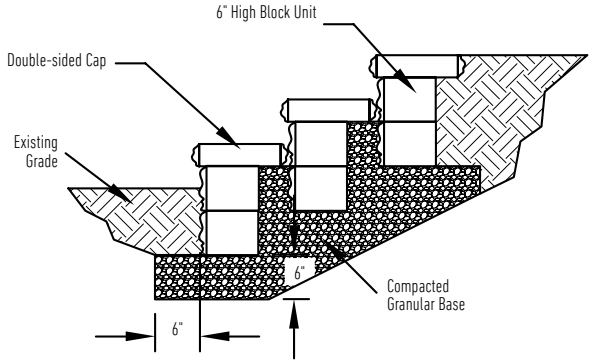
A fill step will have a base course of dummy units in the entire footprint of the steps. For each additional step, add dummy units behind the facing units for stability. There are two methods for creating the step facing. Use sets of either 6-inch-high or 3-inch-high units. A cut-grade set of steps will use one layer of dummy blocks under each step, effectively stepping up the grade.

All applications will require some sort of tread to cover the facing units.

USING FILL SCENARIO



USING CUT SCENARIO

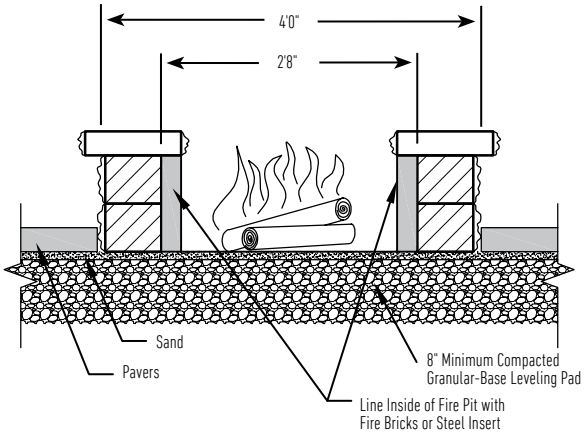


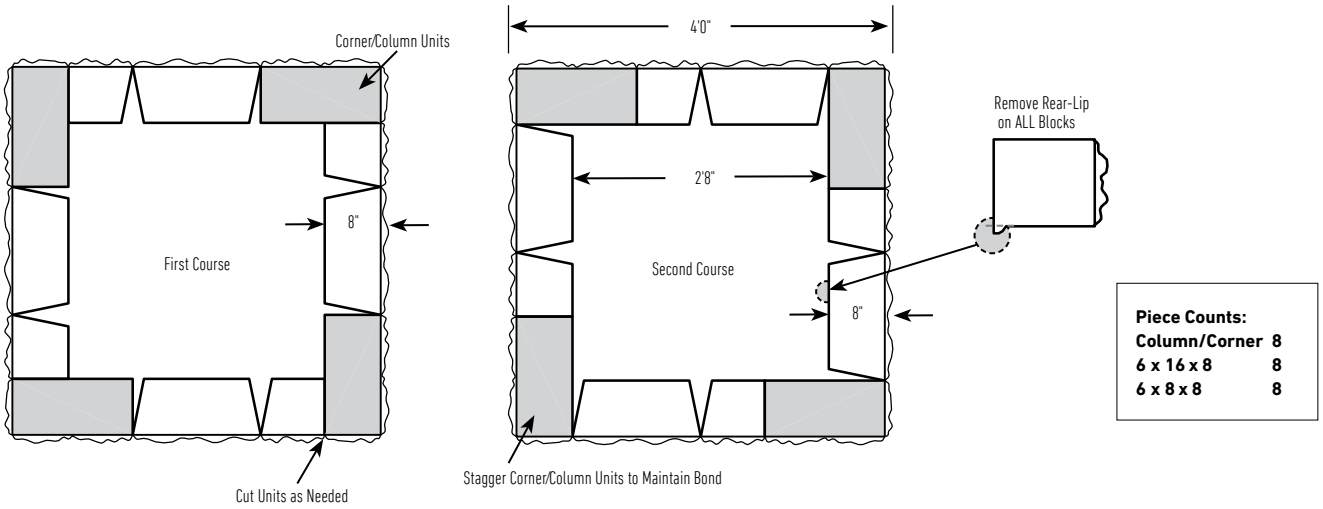
RETAINING WALL SQUARE FIRE PIT CONSTRUCTION

Inside of fire pit must be lined with a heat-resistant material.

Affix all units with construction-grade adhesive.

These blocks are not fireproof and could start to crack under extreme heat. These blocks are intended for landscape applications and are not fire-rated. Over time the blocks may crack. A possible solution is to use heavy fire-rated bricks or a steel liner on the interior of an above or below ground fire ring/pit with the blocks outside the perimeter. Again, the heat may adversely affect landscape products, even with an interior heat-resistant barrier in place.





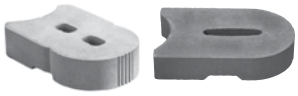
Piece Counts:	
Column/Corner	8
6 x 16 x 8	8
6 x 8 x 8	8

ESTIMATING FOR BELAIR WALL® 2.0 AND BRISA® - FREESTANDING WALL

1. HOW DO I ESTIMATE FOR BURIED BASE UNITS?

Build buried base course using ***Torpedo®/U Start Base Blocks***. Determine the length of the wall in feet and divide by either the unit length or product factor.

Linear feet of wall ÷ by 1.3 = _____ base blocks needed. *48 base blocks per pallet.*



Torpedo® Base Block/U Start Base Block

2. HOW MANY FREESTANDING WALL BLOCKS DO I NEED?

Square feet of wall = _____ sets needed. ***30 sets per pallet.*** Number of sets divided by 30 = _____ pallets needed.

ONE SET = *2 large, 1 medium & 1 small.*

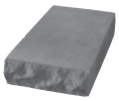
3. HOW MUCH FILTER FABRIC IS NEEDED? (OPTIONAL)

Non-woven, 4- to 6-ounce filter fabric. Determine the sq. ft. of total wall.

sq. ft. ÷ 9 = _____ square yards fabric.

4. HOW MANY CAP UNITS WILL I NEED?

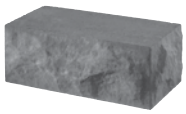
Convert wall length (L) to inches: L x 12 = _____ L in inches (LI). Cap factor (CF) = cap front inches + cap back inches ÷ 2. (Additional caps will be needed for elevation changes and curves, factor 10%.) LI ÷ CF = _____ caps.



2-sided trapezoidal cap unit

5. HOW MANY CORNER/COLUMN UNITS DO I NEED?

Height of column in feet divided by 8 = _____ of units needed. *28 Corner/column units per pallet.*



2-sided corner/column unit

BELAIR WALL® 2.0 AND BRISA® INSTALLATION CONSTRUCTION GUIDE - FREESTANDING WALL

BEFORE BASE COURSE SEE BASIC INSTALLATION FOR RETAINING WALL CONSTRUCTION GUIDE FOR BASE PREP AND LEVELING PAD INSTRUCTIONS

IMPORTANT TIP FOR BASE COURSE:

Due to the manufacturing process of this block, pitch the base course back slightly to keep the wall level on higher courses. For walls over 30 inches in height, soil reinforcement is generally necessary. A qualified engineer should be consulted for design and analysis of structures.

BASE COURSE

Install the Torpedo® Base Block or U Start 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. *See Diagram 1.* The base course will be buried.

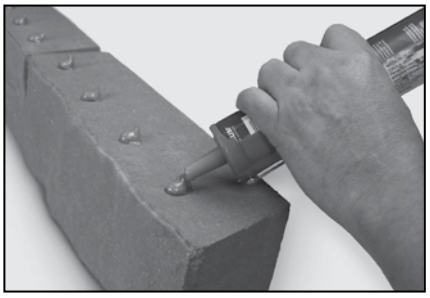
WALL COURSES

Glue all courses. Use ½-inch-diameter dots of glue 3 inches apart on the front half 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. Work from the appropriate side of the pattern. *See Diagram 2.*

Build a separate wall on each side of the base unit. 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 layer of the pattern on each side of the wall, maintaining a uniform distance between the two walls. Check horizontal and vertical levels of each wall. *See Diagram 3.*

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. *See Diagram 4.*

FREESTANDING WALL WITH 90-DEGREE CORNERS



TIP:
Use ½-inch-diameter dots of glue 3 inches apart. The dots of glue help with minimizing oozing of the glue onto the face of the units.

Diagram 2 – Base Course

Diagram 2 – Base Course

Diagram 3 – Subsequence Courses

Diagram 4 – Check gaps

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 wall blocks on the inside side of the corner/column units to make them fit. All units should be glued bottom to top. *See Diagram 5.*

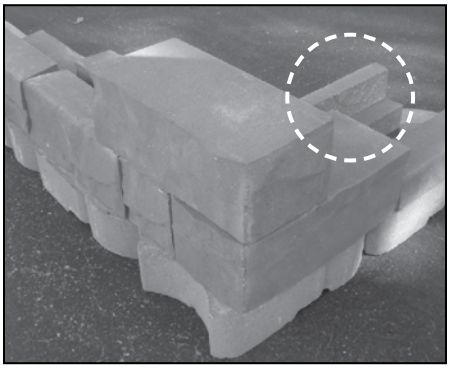
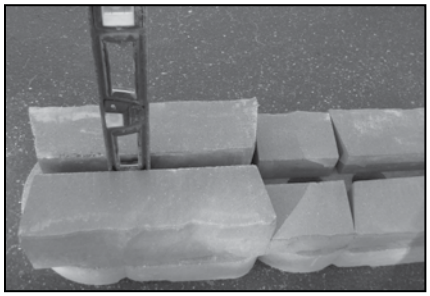


Diagram 5 – 90-Degree Corner

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 hand-held grinder with a diamond blade. Start second row by placing blocks in a staggered relationship to the course beneath. *See Diagram 6.*

Diagram 6 – Abutting to a Column



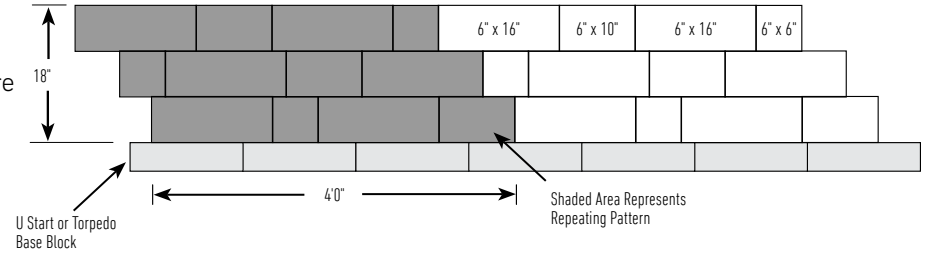
TIP:
Leave approximately 1" space between walls. A good tool to help maintain that consistent spacing is level.

NOTE:

Three-sided cap end and three-sided wall end units are available for Belair Wall 2.0 and Brisa wall systems. Exclude a cap unit if using a cap end unit. Use wall end units if not ending wall with a column or for step-up.

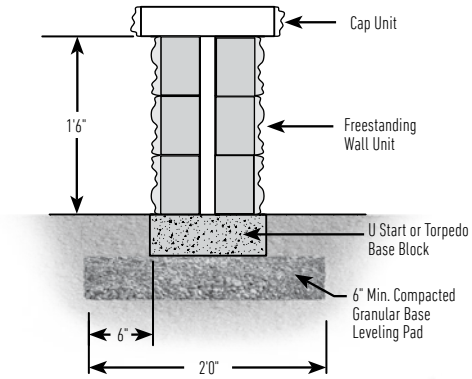
WHEN TO USE A PATTERN FOR FREESTANDING WALLS

One set of 6-inch-high blocks consists of 2 large units, 1 medium unit and 1 small unit, and is 1 square foot of two sided wall.



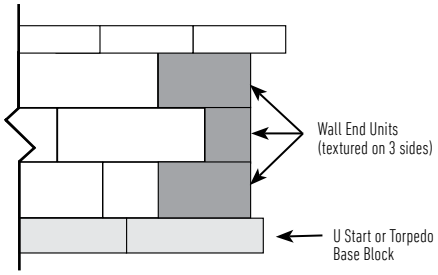
NOTE: *These freestanding wall installation patterns show only one side of the freestanding wall. The same number of blocks are needed to build the other side of a freestanding wall when using Belair Wall 2.0 and Brisa freestanding wall systems. Freestanding wall installation patterns are measured in length by height of one side of the wall, and are expressed in square feet. Sets of blocks required include the number of blocks needed to build both sides of the wall.*

TYPICAL CROSS SECTION

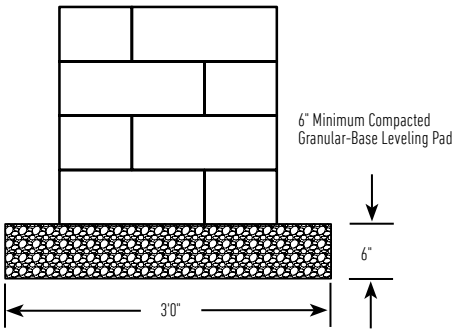


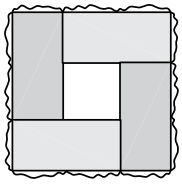
ENDING A WALL WITH WALL ENDS

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. Glue all pieces in place using concrete adhesive.

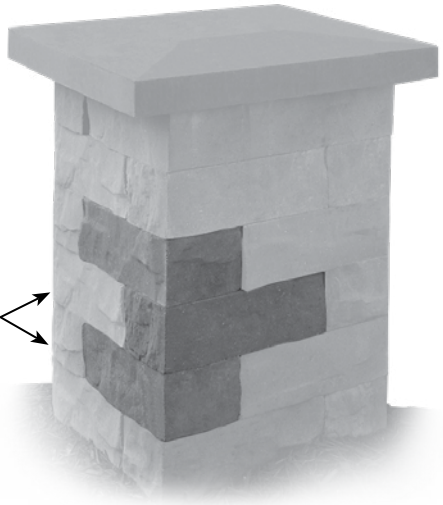


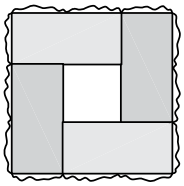
COLUMN CONSTRUCTION



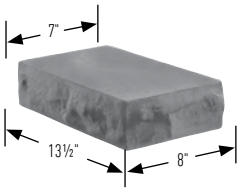


Course A





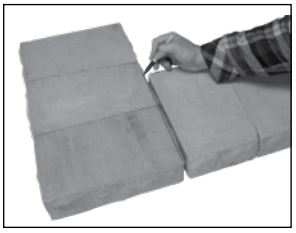
Course B

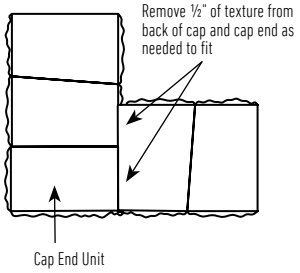


TRAPEZOID DOUBLE-SIDED CAP

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.

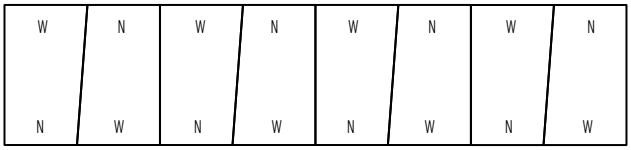
Minimum radius: 7'6"





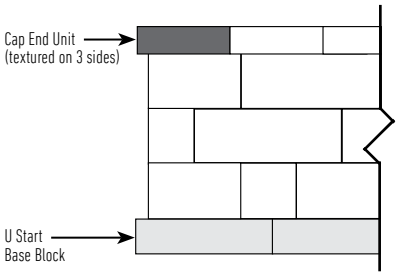
STRAIGHT WALL

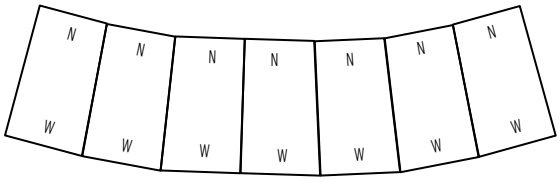
The cap must be laid alternately, narrow (N) and wide (W) faces, for a straight line. Always start capping from the lowest elevation.



CURVES

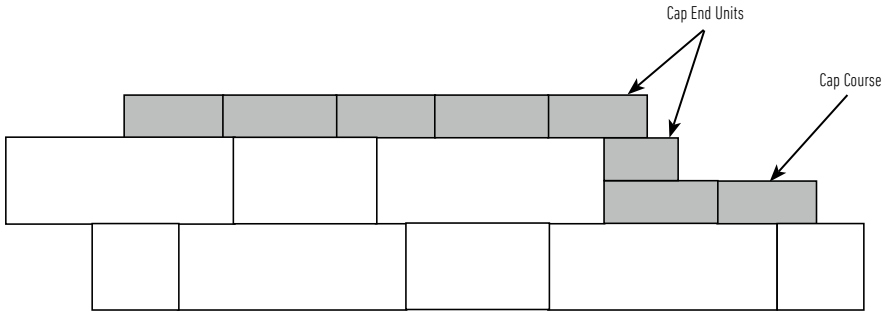
Lay out the cap units side by side with same face facing out (wide faces for outside curves; narrow faces for inside curves).Occasional cutting of some pieces may be necessary.





STEPPING UP CAPS WITH CAP ENDS

If a wall elevation changes, caps can be stacked where the wall steps up. Begin laying caps at the lowest elevation and work your way toward the next 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. If not using a Cap End, place the trapezoid double-sided cap so that the side with the arrow is hidden.



NOTE: To split a block, use a hydraulic splitter or split manually by using a hammer and chisel to score the block on all sides. Pound the chisel on the same line until the block splits. If partial unit sides are not exposed, use a saw with a diamond blade to achieve a tighter fit.

ASP Enterprises | Bowman Construction Supply Inc. | Quick Supply Co. | Cascade GEOSYNTHETICS

LOCATIONS & CONTACT INFO

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salescascade@cascadegeos.com

Portland, OR
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Composite Geomembranes
- GCLs, PVC, HDPE, LLDPE, EPDM, Granular Bentonite

SEDIMENT CONTROL

Inlet Protection
- Grated Inlet, Curb Inlet, Area Inlet Protection

Ditch Checks
- Triangle Silt Dike
- GeoRidge

Perimeter Protection
- High and Low-Porosity Silt Fence, Straw Wattles, Silt Socks
- Safety Fence

Flocculants & Water Treatment
- Polymer-Based & Natural Flocculants

Sediment Basin Skimmers
Dewatering Bags
Trackout Control
- FODS
- Rumble Grates

Turbidity Curtains

EROSION CONTROL

Basic Hydraulically Applied Mulches
- Wood
- Paper
- Blends
- Straw

High-Performance Hydraulically Applied Products
- BFM
- FGM
- Additives & Tackifiers

Temporary Erosion Control Blankets
- Coir & Jute Mat/Nettings
- Short-Term ECBs
- Extended-Term ECBs

Permanent Erosion Control Blankets
- Turf Reinforcement Mats
- HP-TRMs
- Anchor Reinforced Vegetation System

Structural BMPs
- Transition Mats
- Geoweb Cellular Confinement
- Composite Vegetated Armor System
- Flex MSE Vegetated Wall System
- Articulated Concrete Block
- Gabions
- Grout-Filled Geotextile Mats

Vegetation Establishment
- Native Seed & Turf Seed
- Fertilizers
- Organic Soil Additives
- Stratavault Soil Cells

STORMWATER MANAGEMENT

Water Quality
- Inlet Filter Boxes
- Pre-Treatment Chamber
- Nutrient Separating Baffle Boxes
- High-Flow Biofiltration Media
- Hydrodynamic Separators
- Stratavault

Water Quantity
- Modular Underground Storage Systems
- Chamber Detention Systems

Drainage
- HDPE Swale Liner
- Pipe & Fittings
- Drainage Composites
- Strip Drain

Inlet Structures
- PVC
- Drain Basins, In-Line Drains
- Landscape

Permeable Pavers
- Permeable Articulating Concrete Block
- Grass Pavers
- Gravel Pavers
- Concrete Pavers

SPECIALTY

Natural & Synthetic Coir Fiber Logs
Vegetated Reinforced Soil Slopes
Soil Anchors
Root Barrier System
AquaBlok
Muscle Wall

We are full line distributors of construction materials for all project types. Contact us for assistance with a project. From specification and development to installation and completion, we're here to help with all of your site solution needs.

GEOSYNTHETICS | EROSION CONTROL | STORMWATER MANAGEMENT
SEDIMENT CONTROL | REVEGETATION | HARDSCAPES