Vintage™ Wall Installation Manual

Six Piece System:
– Retaining Walls
– Freestanding Walls
– Pillars

Team Rockwood
Since 1986

Appearance
Dependability
Efficiency

ROCKWOOD®
RETAINING WALLS
A better way.™

The Vintage Wall

Recreating the timeless beauty of a naturally weathered stone wall, Vintage™ is the premier choice for distinctive landscapes. Six unique, double-sided Vintage blocks make it easy to install random patterns for compelling wall designs. Its versatility allows you to combine retaining and freestanding walls to create the ideal solution for the perfect outdoor living space.

The advantages of the Vintage™ System...

It's Fast...
Located on the underside of each Vintage™ block is a 4" x 4" Anchor Bar that makes installation a breeze. The Anchor Bar ensures Vintage builds perfectly vertical and has the highest shear resistance in the industry.

It's Simple...
The interlocking channel on top of each Vintage™ block provides for quick installation of retaining walls, garden walls, seat walls, and pillars.

It's Strong...
In addition to the Anchor Bar, the Vintage™ Block's unique design not only resists the forces of tumbling, but the elements as well. Upon assembly, Vintage™ Blocks create a 4" diameter "stone column." When layered with grid, the gravel filled stone columns provide a multi-point interlock, resulting in a more uniform block-to-grid mechanical connection.

It's Versatile...
Six unique, double-sided Vintage™ blocks make it easy to recreate the timeless beauty of a naturally weathered stone wall. Its patented design makes Vintage extremely versatile. You can easily combine retaining and freestanding walls, build using one size block, any combination of blocks, and in 16", 24", and 32" random patterns. Plus Vintage builds a perfect 8 foot radius freestanding wall.
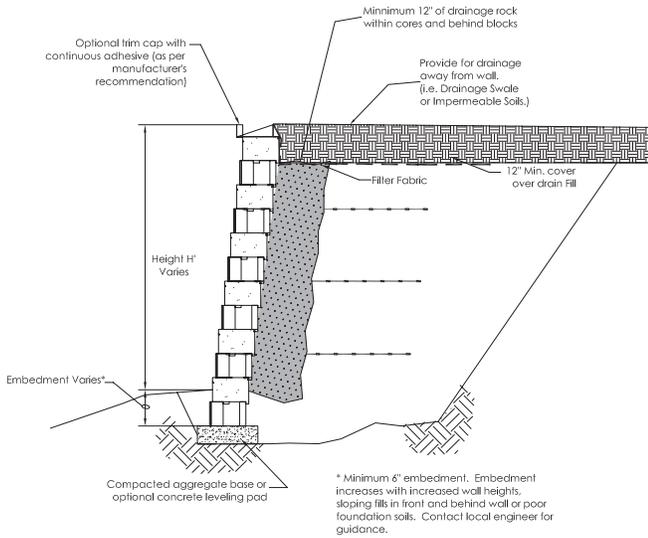
ROCKWOOD®
RETAINING WALLS
A better way.™

Table of Contents

ROCKWOOD®
RETAINING WALLS
A better way.™

Planning Guide

Optional trim cap with continuous adhesive (as per manufacturer's recommendation)

Minnimum 12" of drainage rock within cores and behind blocks

Provide for drainage away from wall. (i.e. Drainage Swale or Impermeable Soils.)

Filter Fabric

12" Min. cover over drain Fill

Height H' Varies

Embedment Varies*

Compacted aggregate base or optional concrete leveling pad

* Minimum 6" embedment. Embedment increases with increased wall heights, sloping fills in front and behind wall or poor foundation soils. Contact local engineer for guidance.

Garden Walls vs. Retaining Walls

There is significant difference in the planning and construction of retaining walls depending on their use. Walls below 4 feet in height are commonly referred to as garden walls, and in most cases, can be built without the input from a geotechnical engineer. Walls above 4 feet and walls with forces behind, or on top of them, require special considera-tions and need to be planned by a qualified engineer.

Before You Begin

Zoning and Permits
Before you plan your project, learn about the necessary zoning requirements and rules for excavating and building in your area. No matter how small your project, be sure you obtain the necessary permits before you start construction.

Know What's Below!
Whether you are planning to do it yourself or hire a profes-sional, smart digging means calling 811 before each job. Homeowners often make risky assumptions about whether or not they should get their utility lines marked, but every digging job requires a call – even small projects like planting trees and shrubs.

811®
Know what's below.
Call before you dig.

Material Requirements

Use the following methods to estimate the amount of base material, drainage rock, and adhesive you will need for your project.

1. Base Material Needed
A typical trench is 2' wide and 14" deep to bury a full course of 8 inch block. Your base material must be a minimum of 6 inches (.5 ft.) in height.

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \div 27 = \underline{\hspace{2cm}}$$

Wall Length (ft)   Base Height (ft)   Base Width (ft)   Cubic Yards*

*Add 10% for inconsistencies in the trench and compaction.

2. Drainage Rock Needed
You need enough drainage rock to fill 1' behind the block and to fill any cores.

$$\underline{\hspace{2cm}} \times 1.33 \div 27 = \underline{\hspace{2cm}}$$

Sq ft of wall   Cubic Yards

3. Adhesive Needed
The amount of glue required depends on the type of block and construction. Use the guide below to estimate the amount of adhesive required.

Approximate length of bead by bead diameter:

Tubes	——— (Bead Widths) ———		
	1/8" bead	1/4 " bead	3/8" bead
10.5 oz.	129 ft	32 ft	14 ft
29 oz.	355 ft	89 ft	39 ft

	— (Tube Sizes) —	
	10.5 oz.	29 oz.
Tubes/Case	12	12
Cases/Pallet	54	38

Professionals depend on Super-Stik™ adhesive for its superior strength, time-tested performance and versatility. Super-Stik is the ideal solution for Segmental Retaining Walls, Pavers, and Masonry. You can even apply it when damp!

Especially formulated for:
• Use on wet or frozen surfaces
• Superior strength and stability
• Extreme temperatures
• Waterproof bond

On-Line Resources

Whether you are a seasoned professional or a weekend warrior, there is an ever growing resource of photography, backyard plans, product information and construction guides on-line at www.rockwoodwalls.com

Visit us on-line to see backyard patio plans, photos, design ideas, and MORE!

www.rockwoodwalls.com

Construction Guides

Patio Plans

Important names, dates, and phone numbers:

Vintage™ Blocks

4" Block Small*
Front: 4" H x 6" W x 10" D
Back: 4" H x 6" W x 10" D
Weight: 15 lbs., 6 kg

4" Block Medium*
Front: 4" H x 12" W x 10" D
Back: 4" H x 10" W x 10" D
Weight: 25 lbs., 11 kg

4" Block Large*
Front: 4" H x 18" W x 10" D
Back: 4" H x 16" W x 10" D
Weight: 40 lbs., 18 kg

8" Block Small*
Front: 8" H x 6" W x 10" D
Back: 8" H x 6" W x 10" D
Weight: 30 lbs., 13 kg

8" Block Medium*
Front: 8" H x 12" W x 10" D
Back: 8" H x 10" W x 10" D
Weight: 50 lbs., 23kg

8" Block Large*
Front: 8" H x 18" W x 10" D
Back: 8" H x 16" W x 10" D
Weight: 80 lbs., 37 kg

4" Pillar Block (21" Pillars)*
Size: 4" H x 15" W x 6" D
Weight: 26 lbs., 12 kg

4" Pillar/Corner Block (27" Pillars)*
Size: 4" H x 18" W x 9" D
Weight: 50 lbs., 23 kg

4" Freestanding End/Corner Block**
Size: 4" H x 18" W x 10" D
Weight: 58 lbs., 26 kg

8" Pillar Block (21" Pillars)*
Size: 8" H x 15" W x 6" D
Weight: 52 lbs., 24 kg

8" Pillar/Corner Block (27" Pillars)*
Size: 8" H x 18" W x 9" D
Weight: 100 lbs., 45 kg

8" Freestanding End/Corner Block**
Size: 8" H x 18" W x 10" D
Weight: 116 lbs., 53 kg

4" Universal Cap*
Front: 4" H x 18" W x 10.5" D
Back: 4" H x 14" W x 10.5" D
Weight: 54 lbs., 24 kg

> *Note: Unit availability, color, and specifications vary by manufacturer. Please contact your nearest Rockwood manufacturer or dealer for more information.*

*Weights vary by manufacturer. *Split 2 sides. **Split 3 sides*

Tools and Materials You Will Need

Base Material .... 3/4" aggregate with fines
Drainage Rock .... 3/4" to 1" clean aggregate
Hammer & Chisel or Masonry Splitter ...... For splitting units
Masonry Saw .... For cutting units
Shovel .... Excavation
Tamper .... Compaction
Super-Stik™ Adhesive .... To secure split/cut units and caps
Rubber Mallet .... For leveling block
String Line .... Use to align units
Level .... To insure first course is level, front-to-back and side-to-side
Gloves .... Protective hand-wear for positioning block
Safety Glasses .... Always wear eye protection during construction

Super-Stik™ Adhesive
Size: 29oz. or 10.5 oz. tubes

Construction Preparation for Retaining Walls

The first thing to consider is the wall height and combination of wall patterns you want to use in your retaining wall design. The buried base should consist of 8" x 18" block with a combination of 16", 24", and/or 32" wall patterns, which can be installed after embedment. To achieve the desired height of your wall, a combination of any suggested wall pattern can be used. (i.e., 24" wall pattern can be topped with a 16" wall pattern or vice versa.)

Calculating Block Requirements for Retaining Walls

To calculate the number of individual blocks required for your retaining wall, select a 16", 24", or 32" pattern and refer to the example calculations below. Since each pattern has a fixed number of blocks, calculating the quantity of blocks required is done by multiplying your total wall square footage by the individual blocks per pattern.

Pattern examples and calculations: ▨ *= Front (Long) sides of Vintage block*

Block Required for 16" Tall Retaining Wall (18 sq ft)
- 9 - 8" x 18" Blocks = 9 sq ft
- 9 - 8" x 12" Blocks = 6 sq ft
- 9 - 8" x 6" Blocks = 3 sq ft

Example: 150 sq ft wall (150 ÷ 18 sq ft = 8.33 patterns)
- 8" x 18" = 9 x 8.33 = <u>75 blocks</u>
- 8" x 12" = 9 x 8.33 = <u>75 blocks</u>
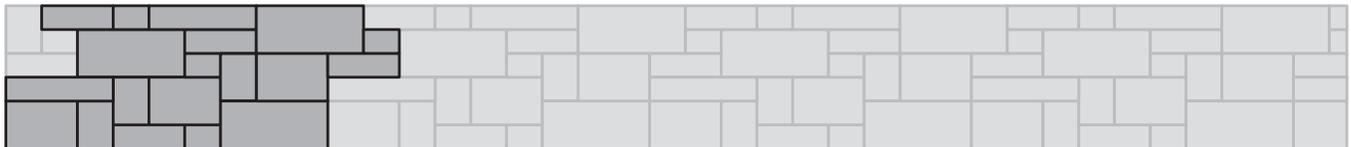- 8" x 6" = 9 x 8.33 = <u>75 blocks</u>

Block Required for 16" Tall Retaining Wall (12 sq ft)
- 4 - 8" x 18" Blocks = 4 sq ft
- 4 - 8" x 12" Blocks = 2.67 sq ft
- 4 - 8" x 6" Blocks = 1.33 sq ft
- 4 - 4" x 18" Blocks = 2 sq ft
- 4 - 4" x 12" Blocks = 1.33 sq ft
- 4 - 4" x 6" Blocks = 0.67 sq ft

Example: 150 sq ft wall (150 ÷ 12 sq ft = 12.5 patterns)
- 8" x 18" = 4 x 12.5 = <u>50 blocks</u>
- 8" x 12" = 4 x 12.5 = <u>50 blocks</u>
- 8" x 6" = 4 x 12.5 = <u>50 blocks</u>
- 4" x 18" = 4 x 12.5 = <u>50 blocks</u>
- 4" x 12" = 4 x 12.5 = <u>50 blocks</u>
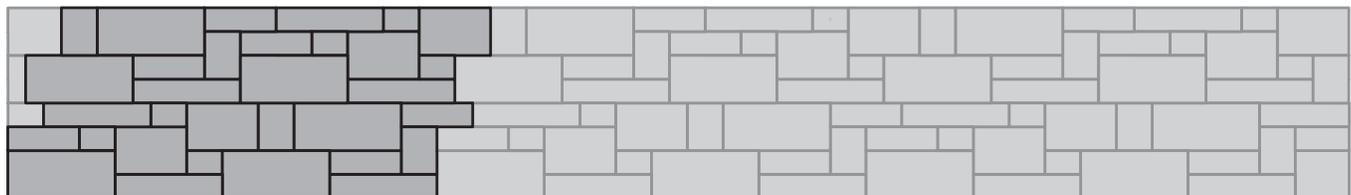- 4" x 6" = 4 x 12.5 = <u>50 blocks</u>

Block Required for 24" Tall Retaining Wall (10 sq ft)
- 4 - 8" x 18" Blocks = 4 sq ft
- 3 - 8" x 12" Blocks = 2 sq ft
- 3 - 8" x 6" Blocks = 1 sq ft
- 3 - 4" x 18" Blocks = 1.5 sq ft
- 3 - 4" x 12" Blocks = 1 sq ft
- 3 - 4" x 6" Blocks = 0.50 sq ft

Example: 150 sq ft wall (150 ÷ 10 sq ft = 15 patterns)
- 8" x 18" = 4 x 15 = <u>60 blocks</u>
- 8" x 12" = 3 x 15 = <u>45 blocks</u>
- 8" x 6" = 3 x 15 = <u>45 blocks</u>
- 4" x 18" = 3 x 15 = <u>45 blocks</u>
- 4" x 12" = 3 x 15 = <u>45 blocks</u>
- 4" x 6" = 3 x 15 = <u>45 blocks</u>

Block Required for 32" Tall Retaining Wall (16 sq ft)
- 6 - 8" x 18" Blocks = 6 sq ft
- 4 - 8" x 12" Blocks = 2.67 sq ft
- 4 - 8" x 6" Blocks = 1.33 sq ft
- 6 - 4" x 18" Blocks = 3 sq ft
- 6 - 4" x 12" Blocks = 2 sq ft
- 6 - 4" x 6" Blocks = 1 sq ft

Example: 150 sq ft wall (150 ÷ 16 sq ft = 9.375 patterns)
- 8" x 18" = 6 x 9.375 = <u>57 blocks</u>
- 8" x 12" = 4 x 9.375 = <u>38 blocks</u>
- 8" x 6" = 4 x 9.375 = <u>38 blocks</u>
- 4" x 18" = 6 x 9.375 = <u>57 blocks</u>
- 4" x 12" = 6 x 9.375 = <u>57 blocks</u>
- 4" x 6" = 6 x 9.375 = <u>57 blocks</u>

Retaining Walls – Getting Started

Note: Vintage retaining walls may be built to a maximum total height of 40" without geogrid. Use a minimum 6" embedment and 12" of clean crushed rock behind wall.

Step 1 – Base Course Preparation

Beginning at the wall's lowest elevation, excavate a trench down the length of the wall with a minimum width of 24" to accommodate at least 6" of base material and 6" of block embedment.
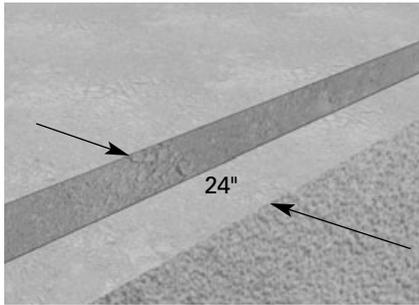
24"

As a rule of thumb, for every 8" to 10" of wall height, 1" of block should be buried with a minimum of 6" base course embedment. Step the trench up or down with respect to adjacent grade.

Step 2 – Leveling Pad Installation

Note: Unlike other wall systems, Vintage builds vertically with no setback. For this reason, take extra caution to make sure the first course is level from front to back to prevent tipping or overturning.

When building under 3' in height, place and compact a minimum of 6" base material to 95% Standard Proctor. Verify the base is level with a transit or hand level. Be aware the base material (commonly referred to as road base or base aggregate) will vary from region to region.
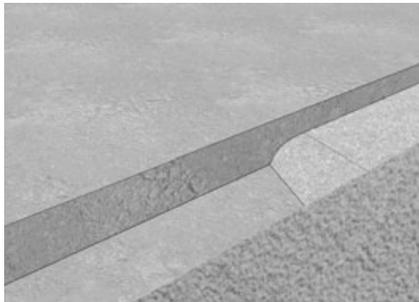
When building over 3' in height, it is highly recommended to build on a 7.1° inclined base (a 1" setback). Simply place 3" of material on top of your compacted leveling pad. Screed the excess material away using a level tied to an angled board, compact to 95% std. proctor. Walls 4' and above need to be built with geosynthetic reinforcement and may need to be designed by a licensed engineer. See page 13 for details.
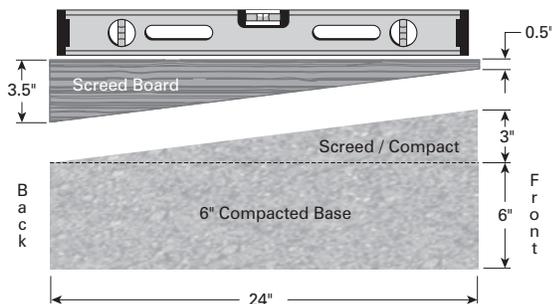
0.5"
3.5"
Screed Board
Screed / Compact
3"
Back
6" Compacted Base
Front
6"
24"

Step 3 – Base Course Installation

The base course will consist of Vintage 8" x 18" blocks. Use a string line for alignment on straight wall applications. All blocks should rest firmly on the pad and be centered on the base to allow approximately 6" of base area in front and behind the block. Level each block side-to-side, front-to-back, and across three full blocks with a hand level. A rubber mallet may be used to level and align the Vintage blocks.
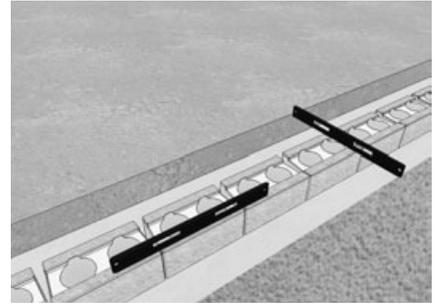
Note: For best alignment results on straight walls use the string line within the interlocking channel.

Step 4 – Core and Drainage Fill

Place 3/4" to 1" clean aggregate (crushed rock) a minimum of 12" behind the blocks. This creates a drainage zone that helps to unify and maximize the performance of the wall. Fill all Vintage cores with the same 3/4" to 1" clean aggregate to create vertical Stone Columns. Stone Columns unify the block and grid connection to further strengthen the wall.
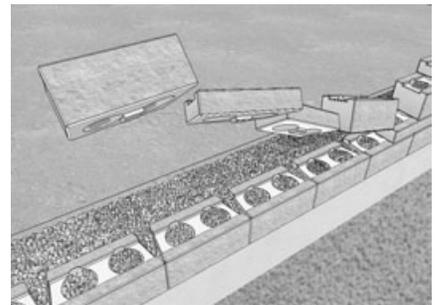
Step 5 – Successive Course Installation

Prior to adding successive courses, the top of each block should be clean and free of foreign material. Follow your pattern as you lay each course. Place drainage fill as in Step 4. Place the backfill material behind the drainage rock in 8" lifts (maximum) and compact to 95% Standard Proctor. Fill all cores. Repeat this process for each successive course.
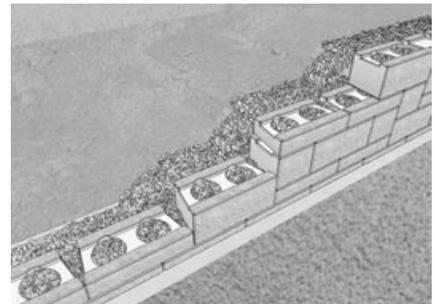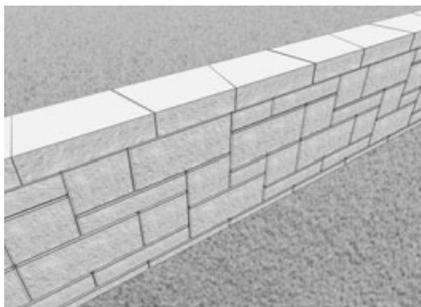
Large compaction or construction equipment should be kept a minimum of 3' from the back of the wall. This 3' area should be compacted with a vibratory plate compactor or a manual hand tamper.

9

Step 6 – Capping a Wall

The Universal Cap has both a finished surface and palletized surface. The finished surface should be exposed on the top course to complete the wall.

Use Super-Stik™ adhesive to secure cap blocks to the wall. If Super-Stik is not available, use an adhesive with high rubber content.

Retaining Walls – Convex (Outside) and Concave (Inside) Radius Curves

The trapezoidal shape of each Vintage block and its unique zero-degree setback allows for varied convex (outside) and concave (inside) radius curves. The radius of a curve (typically measured to the face of the block), can be changed when the angled sides of each block are spread or tightened. However, the minimum radius for an outside curve (without cutting) can be no smaller than 8', while the minimum radius for an inside curve can be no smaller than 12'. When building curves, install the chosen 16", 24", or 32" pattern completely before proceeding with the next adjacent wall pattern (see page 8).
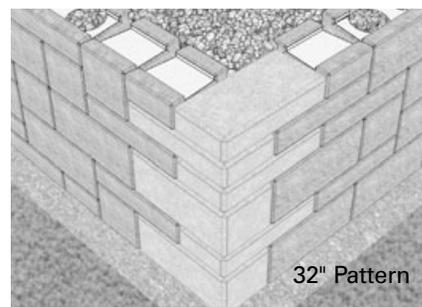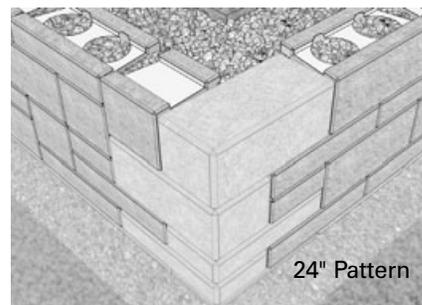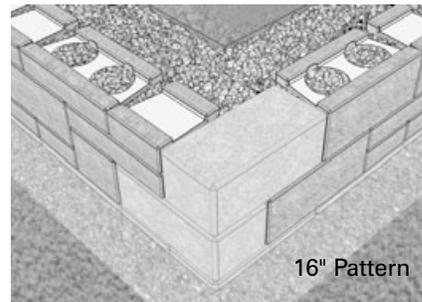
Convex Curve

Concave Curve
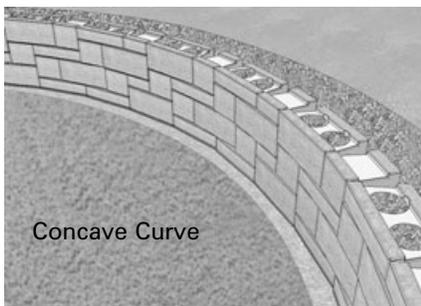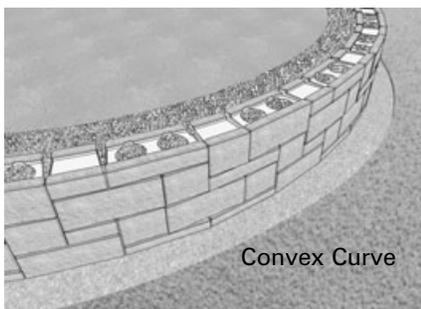
Outside 90° Corner

Begin an outside corner by installing the blocks from the corner out, when possible.

Stagger the Corner Blocks as each successive course is installed.

Depending on the wall pattern, a combination of 4" and 8" Corner Blocks will be used for the corner wall installation.

16" Pattern

24" Pattern

32" Pattern

Inside 90° Corner

Begin an inside corner from the corner of the wall and install the blocks from the corner out, when possible.

If you have to build the wall from the outside to the corner, it may be necessary to cut blocks to secure a proper fit.
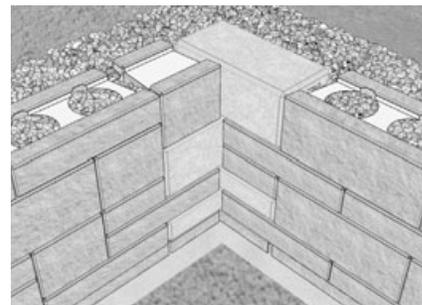
Basic Stair Step w/Universal Cap

The installation described below uses Rockwood's Classic® 6 for a basic stair step application. This will ensure that full blocks fit the width of the stair steps without having to cut them, since each block is 18" in width.

Step 1 – Dimensions of the Steps

The step rise is 6" and the step depth is 10". To determine the number of risers needed, divide the height of the stair by the riser height. To determine the length of the side stair walls, multiply the depth by the number of risers.
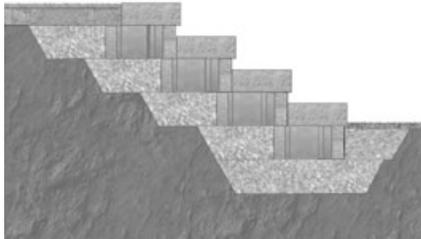
Step 2 – Excavating the Trench for the Base

Follow the standard procedures for base course installation and place the blocks on the leveling pad so there are no gaps between them.
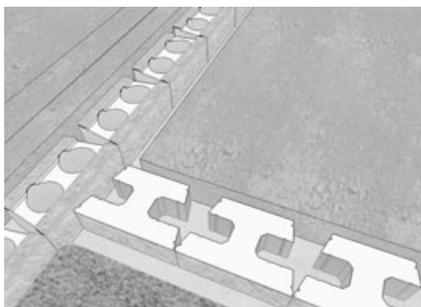
Step 3 – Setting Successive Courses

Excavate a minimum of 6" of base material under all risers. Allow for the base material to extend a minimum of 18" behind each successive course of 6" block. Proper compaction to 95% Standard Proctor is crucial in a stair step application. Each successive riser should overlap the previous riser by 2". Fill the cores and backfill behind the wall with the base material and compact to 95% Standard Proctor. Repeat this process for each successive riser.
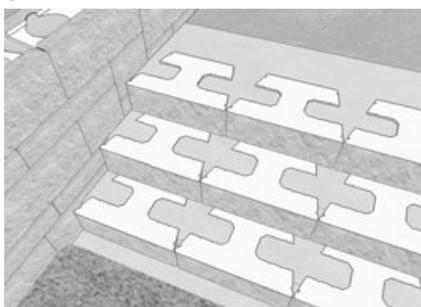
Step 4 – Capping the Risers

When capping risers, make sure the top of the risers are swept free of foreign material and secure Universal Caps in place using Super-Stik™ adhesive.
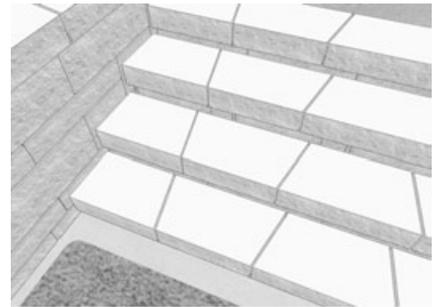
A tumbled cap may also be used for the step tread to help maintain the Vintage look.

Basic Stair Step w/Step Tread

The installation described below uses Rockwood's Step Treads and is for a basic stair step application. It is recommended the riser width be considered in 8" increments for this particular application. This will ensure full blocks fit the width of the stair steps without having to cut them, since each Step Tread is 8" in width.

Step 1 – Dimensions of the Steps

The step rise is 6". The step depth may vary from 10" to 13". To determine the number of risers needed, divide the height of the stair by the riser height. To determine the length of the side stair walls, multiply the depth by the number of risers.
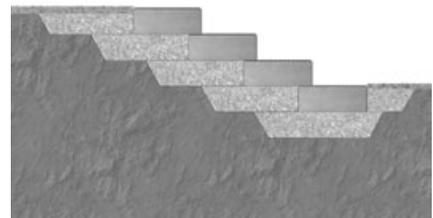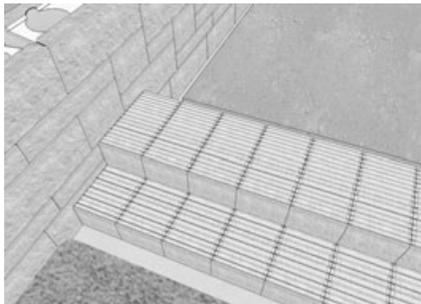
Step 2 – Excavating the Trench for the Base

Follow the standard procedures for base course installation and place the blocks on the leveling pad so there are no gaps between them.

ROCKWOOD®
RETAINING WALLS
A better way.™
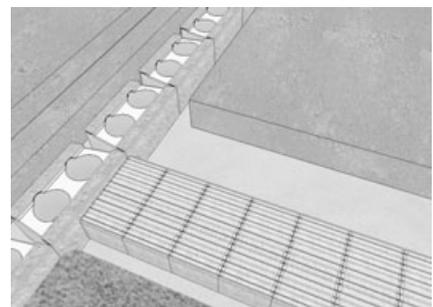
Step 3 – Setting Successive Courses

Excavate for a minimum of 6" of base material under all Step Treads. Allow for the base material to extend a minimum of 18" behind each successive course of Step Treads. Proper compaction to 95% Standard Proctor is crucial in a stair step application. Each successive Step Tread should overlap the previous riser by 2" to 5". Repeat this process for each successive riser.

Step 4 – Completing a Step Tread Stair

Use Super-Stik™ to secure the last Step Tread course. On the next to the last course, add a glue bead to the back half of each tread top. Lay the last course of Step Treads on the glue bead to secure in place.
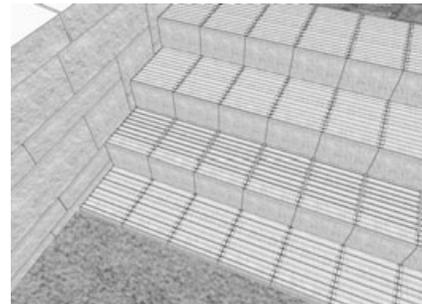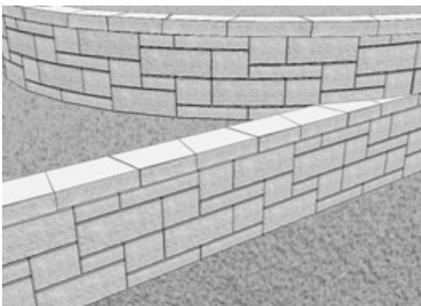
Special Wall Applications

Stepping Down a Wall

A Vintage wall can be stepped down to match a change in grade. At the point of grade transition, set a Vintage 4" or 8" End Block where needed. Finish the top of your wall with tumbled Universal Cap Blocks.
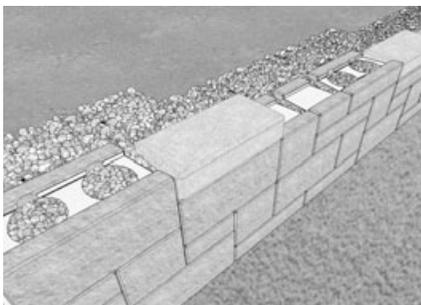
Branch Wall

Branched walls require a minimum of one course embedment, as if each wall is independent.

Tiered Wall

Tiered walls may be installed where it is desirable or aesthetically pleasing to use more than one wall. Upper walls can exert surcharge loads on lower walls. In order to design tiered walls independently, the walls must be set back a distance of at least twice the height of the lower wall. Whenever tiered walls are constructed, a qualified soils engineer should be consulted.
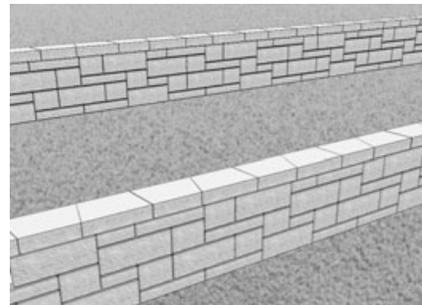
End Wall

For an exposed end wall, use a combination of 4" and 8" Vintage End Blocks. Cut or split blocks to fit.
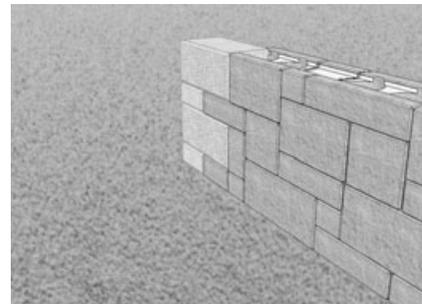
Note: Ending a freestanding wall requires a End/Corner block. Check with your supplier for availability.

ROCKWOOD®
RETAINING WALLS
A better way.™

Retaining Wall – Grid Installation

Geosynthetic reinforcement is an engineered product that is typically comprised of polypropylene, polyester, or other high tensile material. Used in conjunction with segmental retaining wal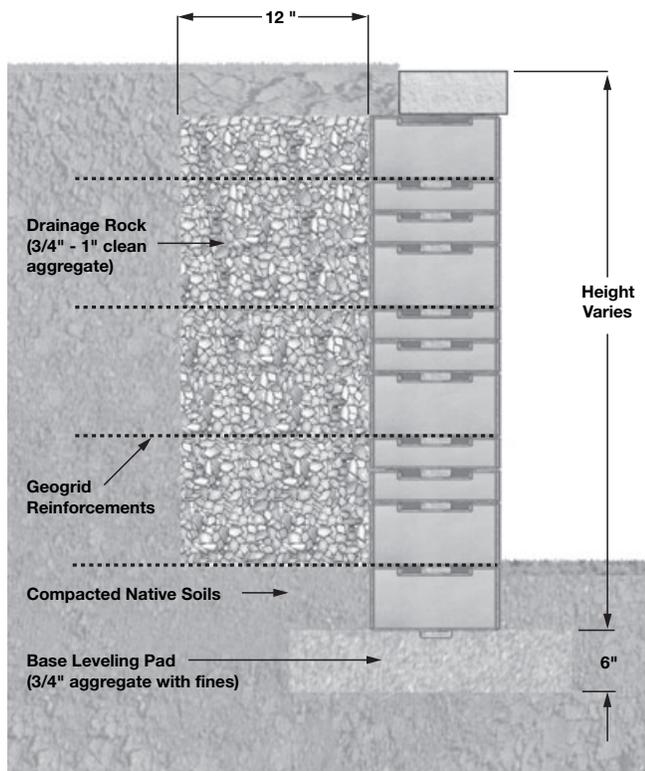l blocks, it helps stabilize the soil mass behind a wall. Depending on the wall design, the length and the number of grid layers will vary.

Generally, the grid strength is in the rolled direction. Install the grid in the same direction as it is unrolled. Biaxial grid is another option in which the strength is the same regardless of direction.

12 "

Drainage Rock
(3/4" - 1" clean
aggregate)

Height
Varies

Geogrid
Reinforcements

Compacted Native Soils

Base Leveling Pad
(3/4" aggregate with fines)

6"


Know what's **below.**
Call before you dig.

Step 1 – Preparation for Grid

The area behind the wall on the grid layer needs to be level with the top of the block and compacted to 95% of the Standard Proctor (ASTM D698). Fill all cores.
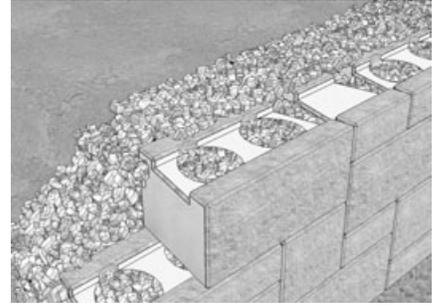
Step 2 – Grid Placement

Place the grid as close to the face of the wall without exposing it. Ensure the grid is placed with the strength direction perpendicular to the wall. Check grid manufacturer specifications for proper grid placement instructions.
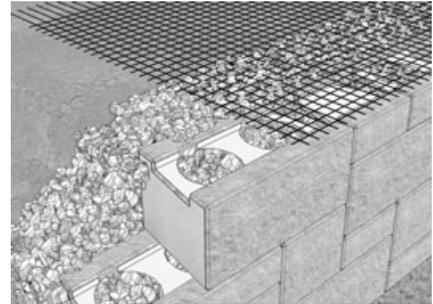
For ease of installation, grid placement is recommended at the top of each wall pattern.

Step 3 – Preparation for Backfill

Place the next course of block to start a new 16", 24", or 32" wall pattern. Pull the grid back and stake it taut and free of wrinkles.
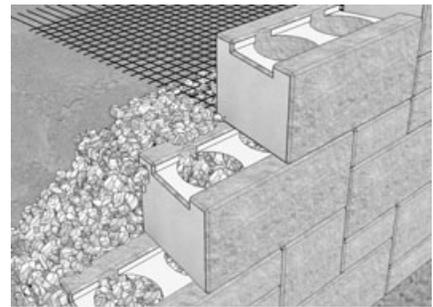
Step 4 – Backfill and Compact

Place 1/2" to 1" clean aggregate (crushed rock) a minimum of 12" behind the blocks. Fill all cores. Place and compact backfill on the grid in lifts no greater than 8". When possible, it is recommended the backfill is deposited directly behind the wall and pushed to the end of the grid to ensure it remains taut and wrinkle-free.
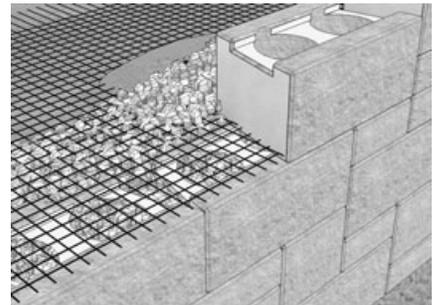
Design Tables for Vintage with Clay ($\phi = 26°$), using SG 200

The design tables were determined using the following assumed soil parameters and conditions:
• Unit weight (γ)=120pcf for all soil types.

• Friction angles (ϕ); (ϕ)=34˚ for Silty Coarse Sand (SM-GM). (ϕ)=30˚ for Silty Sand/Sandy Silt (SM-ML). (ϕ)=26˚ Clayey Silt/Silty Clay (ML-CL).

Designs assume a 6" compacted base aggregate leveling pad, and a swale directly behind wall. Rockwood's design charts are for preliminary use only.

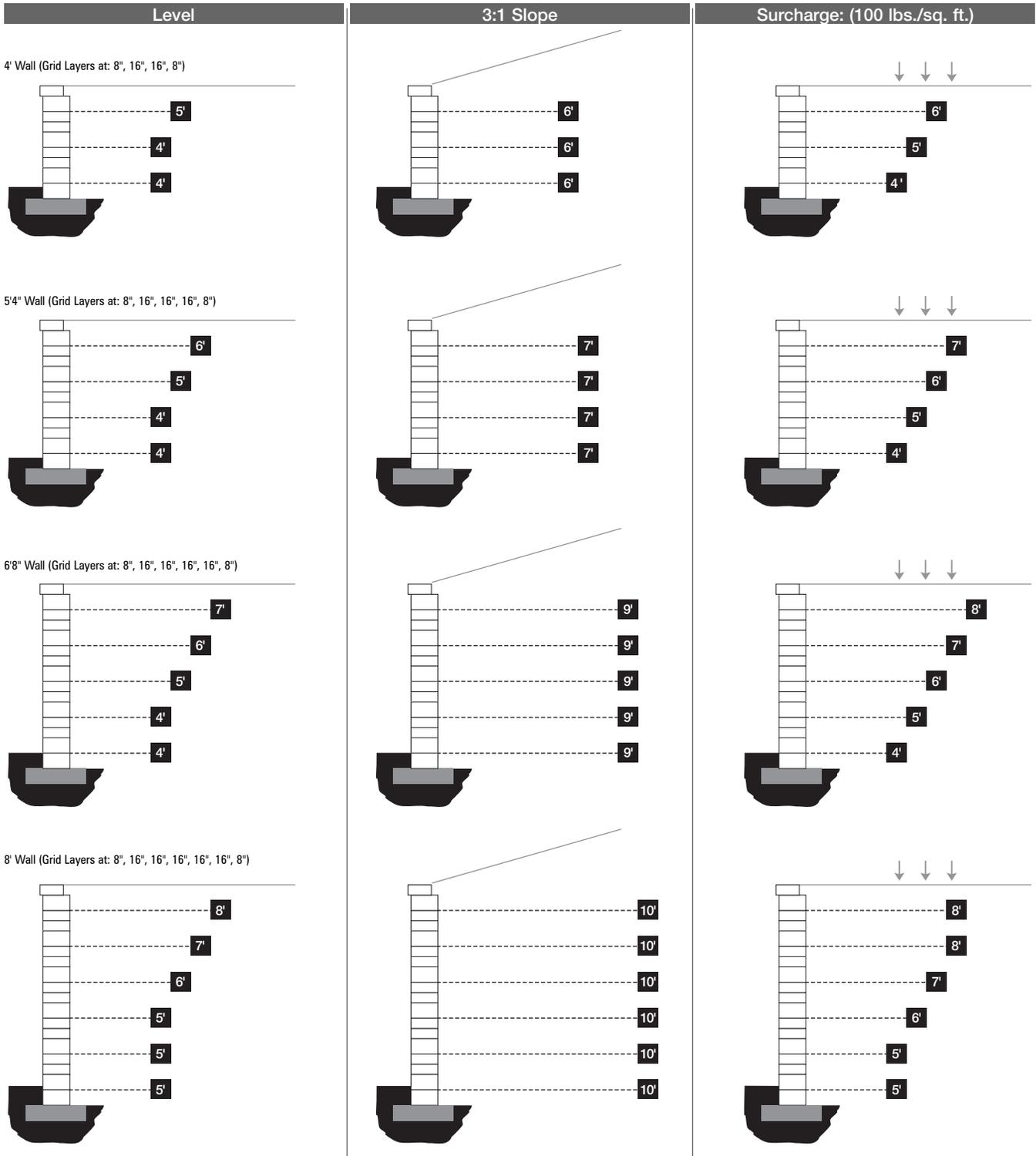A final site specific design should be evaluated and approved by a qualified professional engineer.

Tables account for inclined base construction for walls over 3' in height.

Vintage 16" Pattern for Retaining Walls

Level	3:1 Slope	Surcharge: (100 lbs./sq. ft.)

4' Wall (Grid Layers at: 8", 16", 16", 8")

Level	3:1 Slope	Surcharge
5'	6'	6'
4'	6'	5'
4'	6'	4'

5'4" Wall (Grid Layers at: 8", 16", 16", 16", 8")

Level	3:1 Slope	Surcharge
6'	7'	7'
5'	7'	6'
4'	7'	5'
4'	7'	4'

6'8" Wall (Grid Layers at: 8", 16", 16", 16", 16", 8")

Level	3:1 Slope	Surcharge
7'	9'	8'
6'	9'	7'
5'	9'	6'
4'	9'	5'
4'	9'	4'

8' Wall (Grid Layers at: 8", 16", 16", 16", 16", 16", 8")

Level	3:1 Slope	Surcharge
8'	10'	8'
7'	10'	8'
6'	10'	7'
5'	10'	6'
5'	10'	5'
5'	10'	5'

Design Tables for Vintage with Sand Silt (ϕ = 30˚), using SG 200

The design tables were determined using the following assumed soil parameters and conditions:
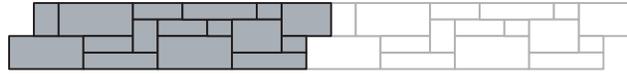• Unit weight (γ)=120pcf for all soil types.

• Friction angles (ϕ); (ϕ)=34˚ for Silty Coarse Sand (SM-GM). (ϕ)=30˚ for Silty Sand/Sandy Silt (SM-ML). (ϕ)=26˚ Clayey Silt/Silty Clay (ML-CL).
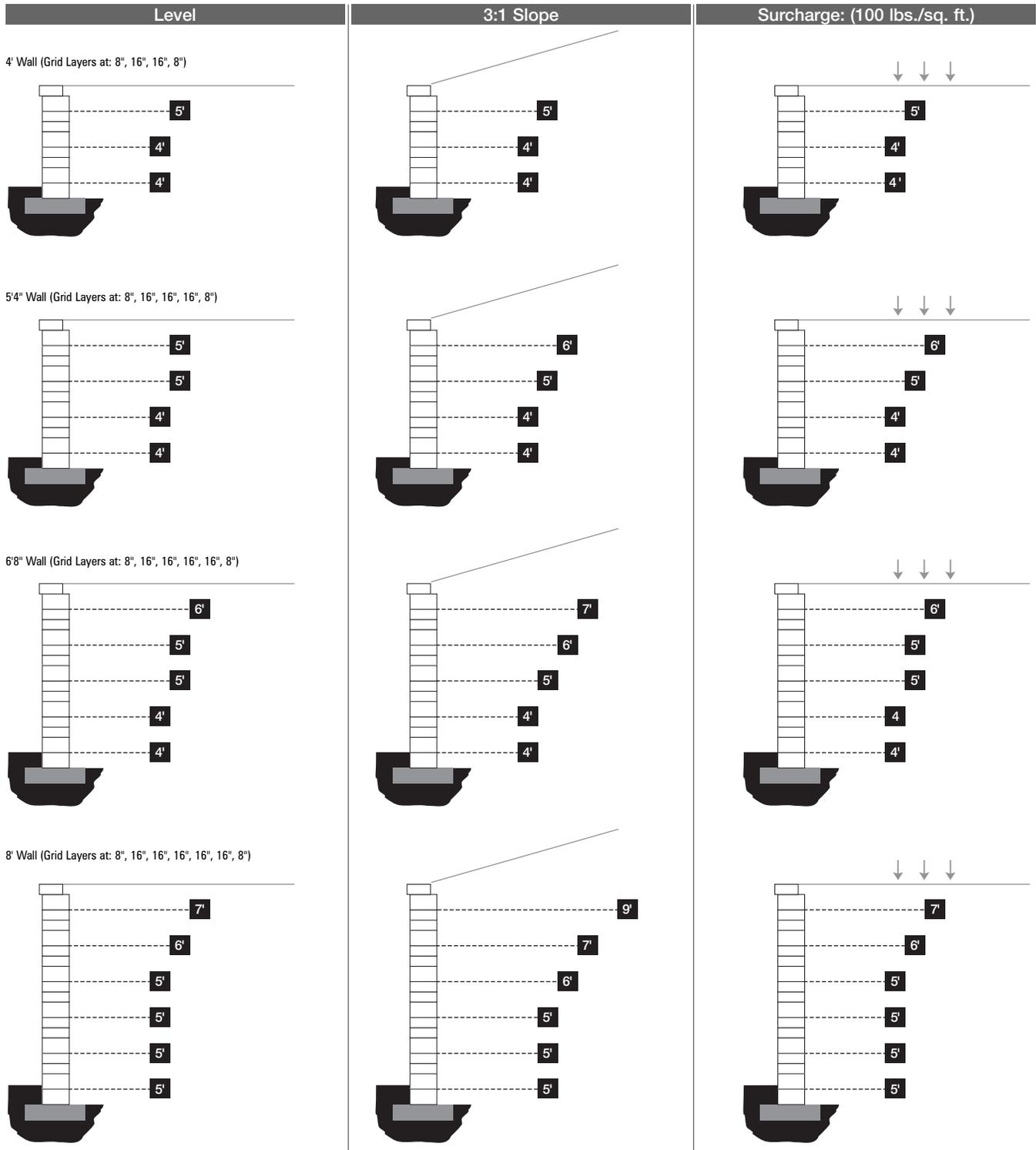
Designs assume a 6" compacted base aggregate leveling pad, and a swale directly behind wall. Rockwood's design charts are for preliminary use only.

A final site specific design should be evaluated and approved by a qualified professional engineer.

Tables account for inclined base construction for walls over 3' in height.

Vintage 16" Pattern for Retaining Walls

Level	3:1 Slope	Surcharge: (100 lbs./sq. ft.)

4' Wall (Grid Layers at: 8", 16", 16", 8")

Level	3:1 Slope	Surcharge
5'	5'	5'
4'	4'	4'
4'	4'	4 '

5'4" Wall (Grid Layers at: 8", 16", 16", 16", 8")

Level	3:1 Slope	Surcharge
5'	6'	6'
5'	5'	5'
4'	4'	4'
4'	4'	4'

6'8" Wall (Grid Layers at: 8", 16", 16", 16", 16", 8")

Level	3:1 Slope	Surcharge
6'	7'	6'
5'	6'	5'
5'	5'	5'
4'	4'	4
4'	4'	4'

8' Wall (Grid Layers at: 8", 16", 16", 16", 16", 16", 8")

Level	3:1 Slope	Surcharge
7'	9'	7'
6'	7'	6'
5'	6'	5'
5'	5'	5'
5'	5'	5'
5'	5'	5'

Design Tables for Vintage with Sand ($\phi = 34°$), using SG 200

The design tables were determined using the following assumed soil parameters and conditions:
• Unit weight (γ)=120pcf for all soil types.

• Friction angles (ϕ); (ϕ)=34˚ for Silty Coarse Sand (SM-GM). (ϕ)=30˚ for Silty Sand/Sandy Silt (SM-ML). (ϕ)=26˚ Clayey Silt/Silty Clay (ML-CL).
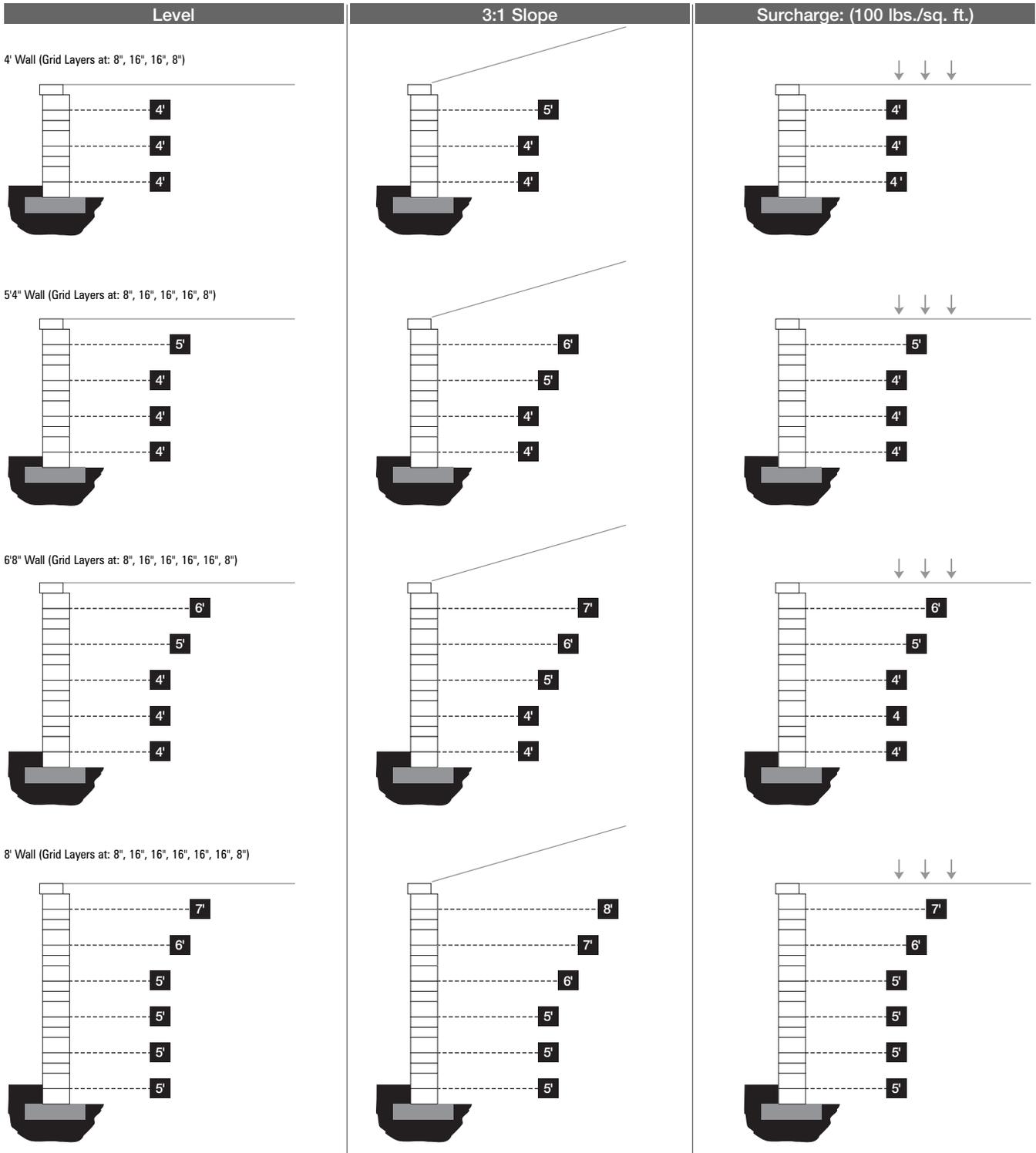
Designs assume a 6" compacted base aggregate leveling pad, and a swale directly behind wall. Rockwood's design charts are for preliminary use only.

A final site specific design should be evaluated and approved by a qualified professional engineer.

Tables account for inclined base construction for walls over 3' in height.

Vintage 16" Pattern for Retaining Walls

Level	3:1 Slope	Surcharge: (100 lbs./sq. ft.)

4' Wall (Grid Layers at: 8", 16", 16", 8")

Level: 4', 4', 4'
3:1 Slope: 5', 4', 4'
Surcharge: 4', 4', 4'

5'4" Wall (Grid Layers at: 8", 16", 16", 16", 8")

Level: 5', 4', 4', 4'
3:1 Slope: 6', 5', 4', 4'
Surcharge: 5', 4', 4', 4'

6'8" Wall (Grid Layers at: 8", 16", 16", 16", 16", 8")

Level: 6', 5', 4', 4', 4'
3:1 Slope: 7', 6', 5', 4', 4'
Surcharge: 6', 5', 4', 4, 4'

8' Wall (Grid Layers at: 8", 16", 16", 16", 16", 16", 8")

Level: 7', 6', 5', 5', 5', 5'
3:1 Slope: 8', 7', 6', 5', 5', 5'
Surcharge: 7', 6', 5', 5', 5', 5'

16

Construction Preparation for Freestanding Walls

The first thing to consider is the wall height and combination of wall patterns you want to use in your freestanding wall design. The buried base should consist of 8" x 18" block with a combination of 16", 24", and/or 32" wall patterns, which can be installed after embedment. To achieve the desired height of your wall, a combination of any suggested wall pattern can be used. (i.e., 24" wall pattern can be topped with a 16" wall pattern or vice versa.)

Calculating Block Requirements for Freestanding Walls

To calculate the number of individual blocks required for your freestanding wall, select a 16", 24", or 32" pattern and refer to the example calculations below. Since each pattern has a fixed number of blocks, calculating the quantity of blocks required is done by multiplying your total wall square footage by the individual blocks per pattern.

Note: Freestanding walls will likely require End Blocks. Check with your supplier for availability.

Pattern examples and calculations: ▓ = *Back (short) sides of Vintage block*   ☐ = *Front (long) sides of Vintage block*
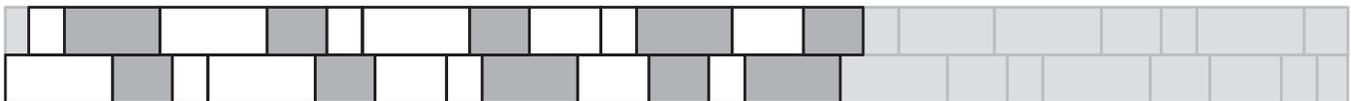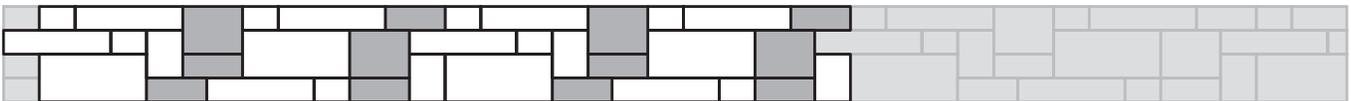

Block Required for 8" Tall Freestanding Wall (15.67 sq ft)
    8 - 8" x 18" Blocks = 7.56 sq ft
   10 - 8" x 12" Blocks = 6.11 sq ft
    6 - 8" x 6" Blocks = 2 sq ft

Example: 150 sq ft wall (150 ÷ 15.67 sq ft = 9.57 patterns)
    8" x 18" = 8 x 9.57 = 77 blocks
    8" x 12" = 10 x 9.57 = 96 blocks
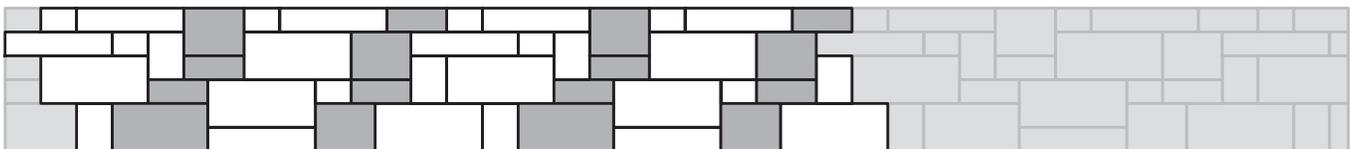   8" x 6" = 6 x 9.57 = 58 blocks

Block Required for 16" Tall Freestanding Wall (7.56 sq ft)
   2 - 8" x 18" Blocks = 2 sq ft
   2 - 8" x 12" Blocks = 1.11 sq ft
   2 - 8" x 6" Blocks = .67 sq ft
   4 - 4" x 18" Blocks = 2 sq ft
   4 - 4" x 12" Blocks = 1.11 sq ft
   4 - 4" x 6" Blocks = .67 sq ft

Example: 150 sq ft wall (150 ÷ 7.56 sq ft = 20 patterns)
    8" x 18" = 2 x 20 = 40 blocks
    8" x 12" = 2 x 20 = 40 blocks
    8" x 6" = 2 x 20 = 40 blocks
    4" x 18" = 4 x 20 = 80 blocks
   4" x 12" = 4 x 20 = 80 blocks
    4" x 6" = 4 x 20 = 80 blocks

Block Required for 24" Tall Freestanding Wall (11.34 sq ft)
   5 - 8" x 18" Blocks = 4.89 sq ft
   3 - 8" x 12" Blocks = 1.67 sq ft
   3 - 8" x 6" Blocks = 1 sq ft
   4 - 4" x 18" Blocks = 2 sq ft
   4 - 4" x 12" Blocks = 1.11 sq ft
   4 - 4" x 6" Blocks = 0.67 sq ft

Example: 150 sq ft wall (150 ÷ 11.34 sq ft = 13.22 patterns)
    8" x 18" = 5 x 13.22 = 66 blocks
    8" x 12" = 3 x 13.22 = 40 blocks
    8" x 6" = 3 x 13.22 = 40 blocks
    4" x 18" = 4 x 13.22 = 53 blocks
    4" x 12" = 4 x 13.22 = 53 blocks
    4" x 6" = 4 x 13.22 = 53 blocks

Visit www.rockwoodwalls.com for additional Vintage patterns.

Construction Preparation for Freestanding Radius Walls

These freestanding Seat Wall patterns build a 8' outside radius.

Pattern examples and calculations:　　　　▨ *= Front (long) sides of Vintage block*

Block Required for 8" Tall Freestanding Radius Wall (8 sq ft)
  4 - 8" x 18" Blocks = 4 sq ft
  4 - 8" x 12" Blocks = 2.67 sq ft
  4 - 8" x 6" Blocks = 1.33 sq ft

Example: 150 sq ft wall (150 ÷ 8 sq ft = 18.75 patterns)
  8" x 18" = 4 x 18.75 = 75 blocks
  8" x 12" = 4 x 18.75 = 75 blocks
  8" x 6" = 4 x 18.75 = 75 blocks

Block Required for 16" Tall Freestanding Radius Wall (20 sq ft)
  5 - 8" x 18" Blocks = 6 sq ft
  5 - 8" x 12" Blocks = 2.67 sq ft
  5 - 8" x 6" Blocks = 1.33 sq ft
  9 - 4" x 18" Blocks = 3 sq ft
  11 - 4" x 12" Blocks = 2 sq ft
  11 - 4" x 6" Blocks = 1 sq ft

Example: 150 sq ft wall (150 ÷ 20 sq ft = 7.5 patterns)
  8" x 18" = 5 x 7.5 = 38 blocks
  8" x 12" = 5 x 7.5 = 38 blocks
  8" x 6" = 5 x 7.5 = 38 blocks
  4" x 18" = 9 x 7.5 = 68 blocks
  4" x 12" = 11 x 7.5 = 83 blocks
  4" x 6" = 11 x 7.5 = 83 blocks
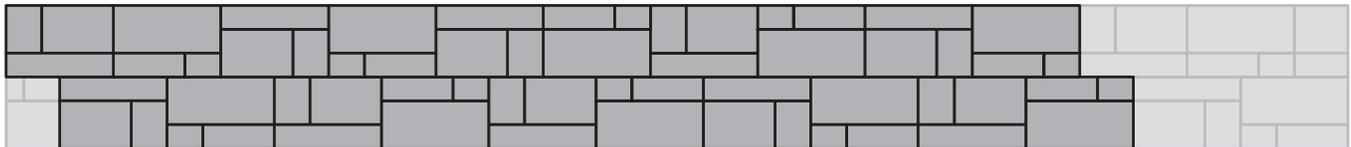
Block Required for 24" Tall Freestanding Radius Wall (30 sq ft)
  10 - 8" x 18" Blocks = 10 sq ft
  10 - 8" x 12" Blocks = 6.67 sq ft
  10 - 8" x 6" Blocks = 3.33 sq ft
  10 - 4" x 18" Blocks = 5 sq ft
  10 - 4" x 12" Blocks = 3.33 sq ft
  10 - 4" x 6" Blocks = 1.67 sq ft

Example: 150 sq ft wall (150 ÷ 30 sq ft = 5 patterns)
  8" x 18" = 10 x 5 = 50 blocks
  8" x 12" = 10 x 5 = 50 blocks
  8" x 6" = 10 x 5 = 50 blocks
  4" x 18" = 10 x 5 = 50 blocks
  4" x 12" = 10 x 5 = 50 blocks
  4" x 6" = 10 x 5 = 50 blocks

Visit www.rockwoodwalls.com for additional Vintage patterns.

ROCKWOOD®
RETAINING WALLS
A better way.™

Freestanding Walls – Getting Started

Note: Consult a qualified engineer for design considerations when building freestanding Vintage walls over 48" in height.

Step 1 – Base Course Preparation

Beginning at the wall's lowest elevation, excavate a trench down the length of the wall to accommodate at least 6" of base material and 6" of block embedment. As a rule of thumb, for every 8" to 10" of wall height, 1" of block should be buried with a minimum of 6" base course embedment. Step the trench up or down with respect to adjacent grade.
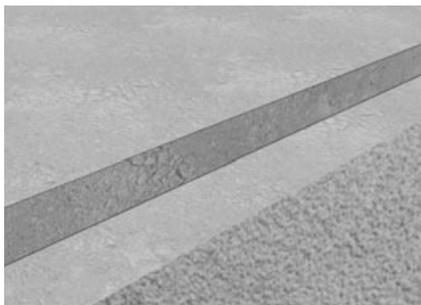
The width of the trench for a Vintage wall should be a minimum of 24". Based on the type of application and what is retained, the depth of the leveling pad may vary. If necessary, consult with an engineer.

After excavating the native soil, and prior to adding base material, remove loose material from the trench and compact.
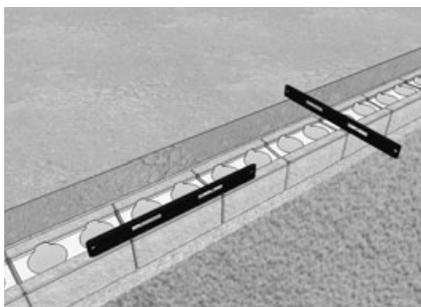
Step 2 – Leveling Pad Installation

Place and compact a minimum of 6" base material to 95% Standard Proctor. Verify the base is level with a transit or hand level. Be aware the base material (commonly referred to as road base or base aggregate) will vary from region to region.
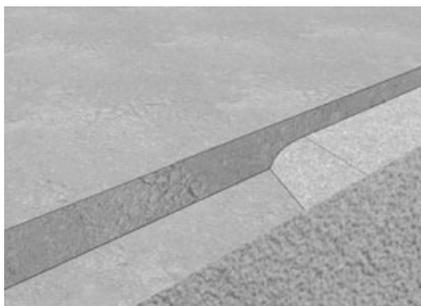
Step 3 – Base Course Installation

The base course will consist of Vintage 8" x 18" blocks. Use a string line for alignment on straight wall applications. All blocks should rest firmly on the pad and be centered on the base to allow approximately 6" of base area in front and behind the base block. Level each block side-to-side, front-to-back, and across three full blocks with a hand level. A rubber mallet may be used to level and align the Vintage blocks. Lay blocks in alternating directions so there are no gaps between them.
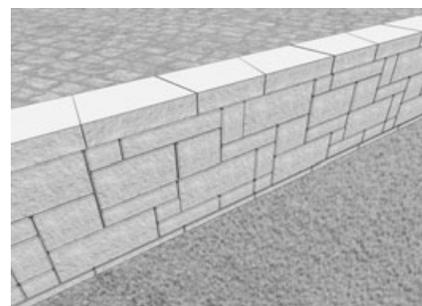
Step 4 – Add more courses

When building successive courses, maintain a Vintage 16", 24", or 32" freestanding wall pattern (see page 17).
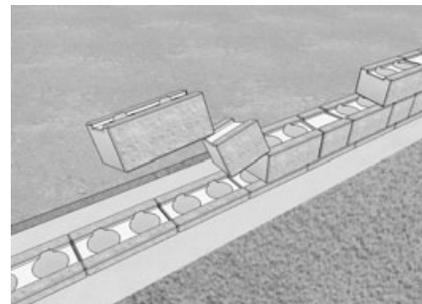
### Step 5 – Finish the Installation

Position the Universal Caps and adhere in place with Super-Stik™ adhesive. Do not exceed a maximum height of 4' without consulting a qualified engineer.

Note: The maximum height may be increased with unit infill, grout, and/or post tensions with a concrete base or footing.

Convex (Outside) and Concave (Inside) Radius Curves

For a radius curved Vintage wall, place the blocks on the leveling pad so there are no gaps between them. You may have to alternate the facing direction of each block and/or cut the block to fit a radius curve.

Convex Curve

Concave Curve
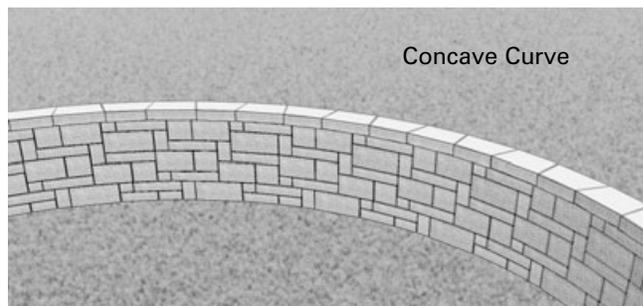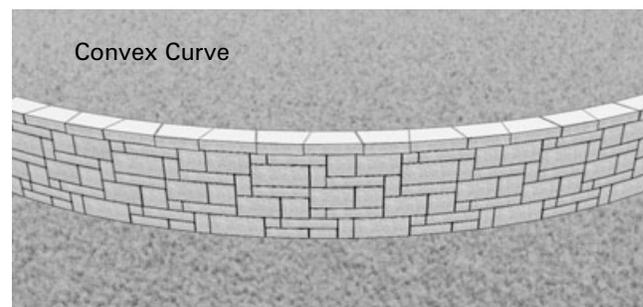
Freestanding Walls – 90° Corners

Outside and Inside 90° Corners

Stagger the End Blocks as each successive course is installed so it is on the opposite side of the wall corner. A combination of 4" and 8" End Blocks will be used for the corner wall installation.

Note: Before you plan your project, check with your manufacturer for availability of 10" deep freestanding wall corner blocks.

16" Pattern

24" Pattern

32" Pattern

16" Pattern

24" Pattern

32" Pattern
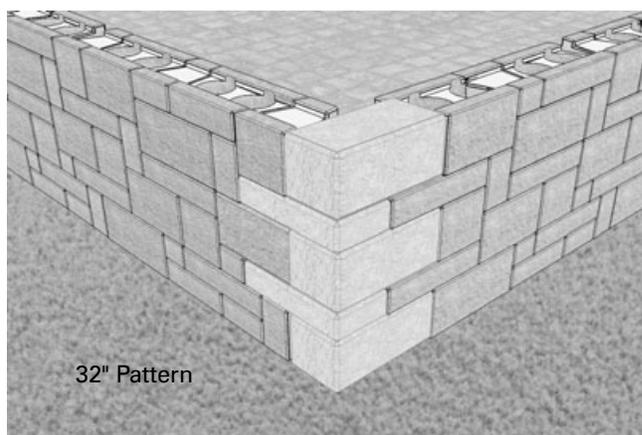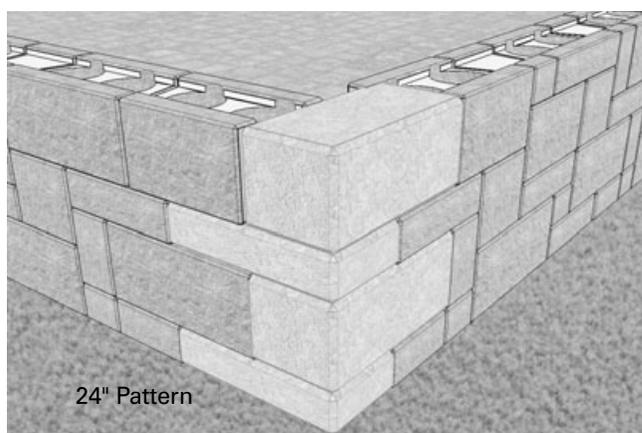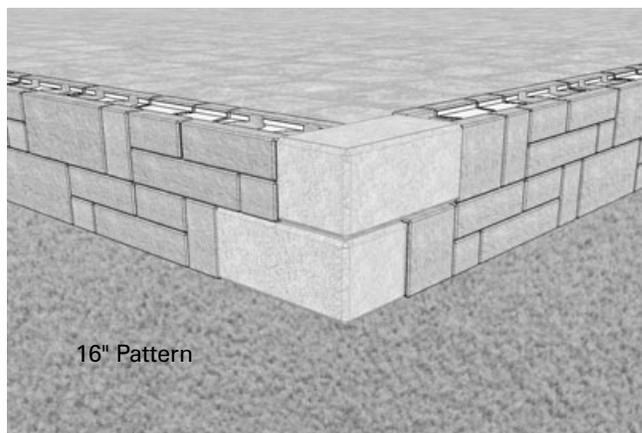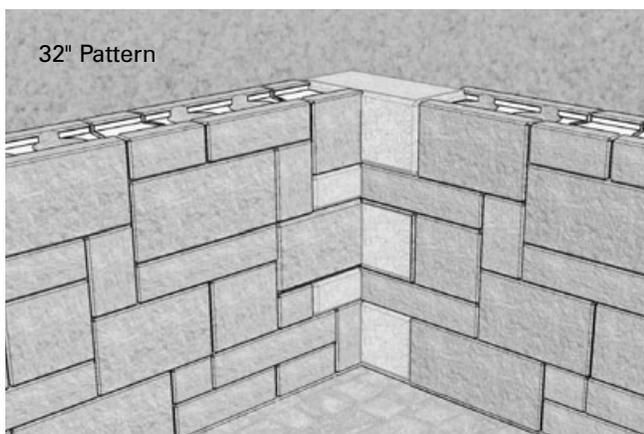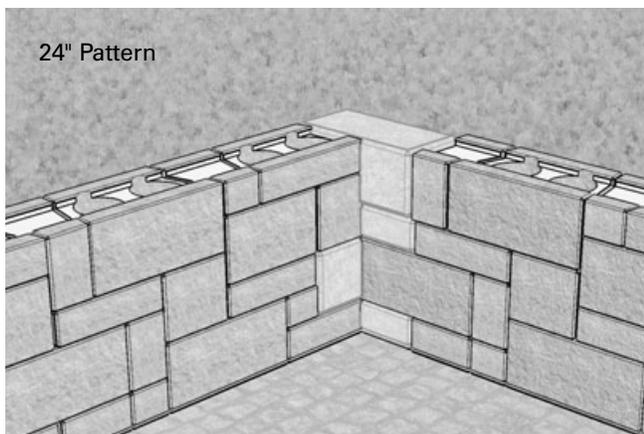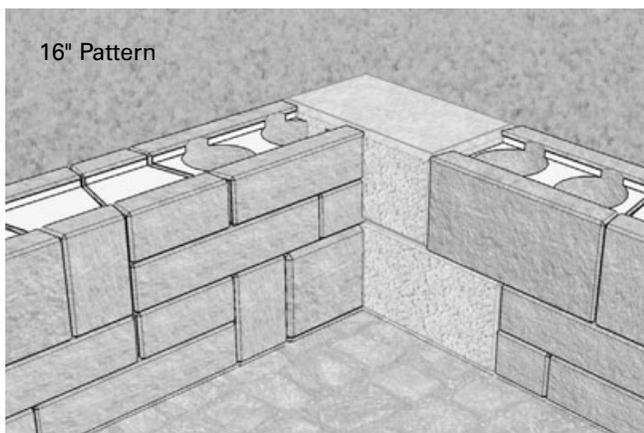
Note: Cutting may be required for inside and outside corner blocks.

Retaining/Freestanding Wall Integration

A Vintage freestanding wall can easily be integrated with a Vintage retaining wall. Begin installing the freestanding wall at the top of the retaining wall using the freestanding wall pattern.
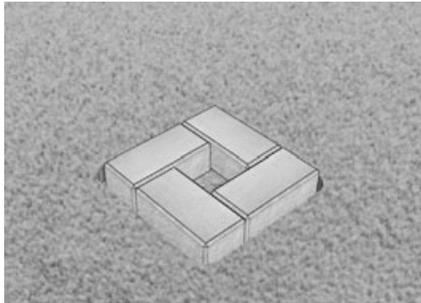
Building Freestanding Pillars

Note: Before you plan your project, check with your manufacturer for availability of Vintage Pillar blocks.

Step 1 – Starting a Pillar

Follow the steps on page 9 for a leveling pad installation, as described in basic wall installation.


Using 8" Pillar Blocks, bury the first course to establish the foundation for your Vintage pillar.

Design pillars in 12" lifts above the base course.

Note: To add additional reinforcement to pillar construction, use Super-Stik™ adhesive on each block. Check with your supplier to determine which concrete adhesive is recommended if Super-Stik adhesive is not available.
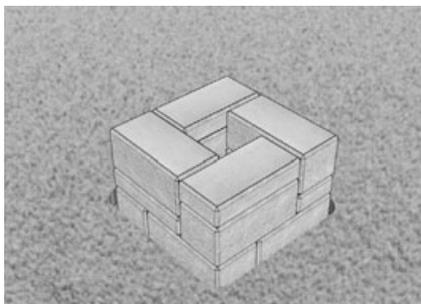
Step 2 – Add More Courses

Each pillar course is built in 12" incre-ments, consisting of 4" and 8" tall Vintage Pillar Blocks.
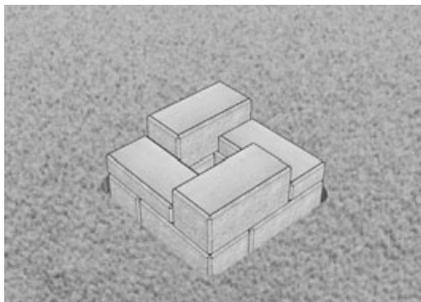
Use adhesive on each block as you build.
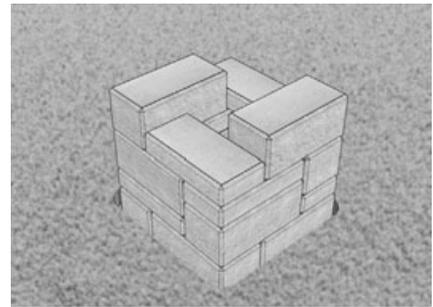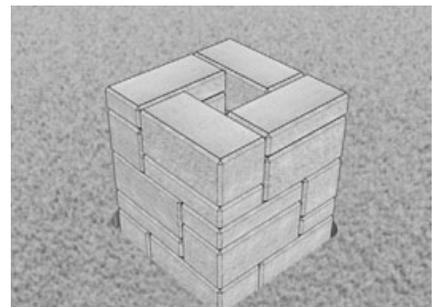

Step 3 – Add More Courses
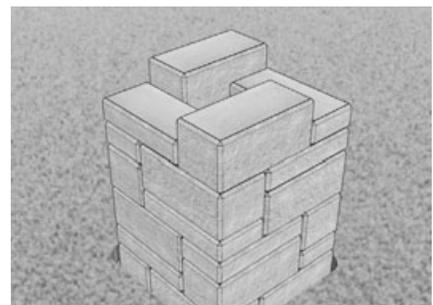

Step 4 – Add More Courses

Step 5 – Add More Courses
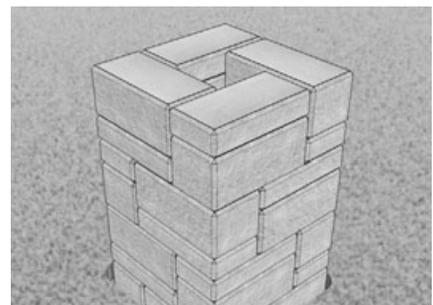

Step 6 – Add More Courses

Step 7 – Finishing

Add Pillar Blocks so the last course creates a flush surface as shown.

To finish the pillar, adhere your desired cap material securely in place using Super-Stik adhesive.

Know what's **below.**
Call before you dig.

What is the Anchor Bar?
The Anchor Bar is a 4" x 2" x 5/8" projection on the bottom of the block that is laid against the backside of the face of the two blocks below.

What is backfill?
Backfill is the material placed behind the drainage zone that has been removed and replaced during the construction process. It needs to be compacted back to 95% Standard Proctor.

What is the base material?
The leveling material used to distribute the weight of the blocks over a wider foundation and to provide a working surface during construction. Base materials are composed of coarse-grained material ranging in size from fine sand to 1" aggregate.

What is batter?
Batter is the angle at which the face of the wall is from being vertical.

What is clay?
Clay is a fine-grained soil that typically possesses both plasticity and cohesiveness. It is considered a poor soil for construction purposes.

What is compaction?
Compaction is the densification of soils by means of mechanical action with equipment such as a plate compactor, jumping jack, or hand tamper. Compaction is the most fundamental element in wall construction.

What is drain tile?
Drain tile is perforated pipe placed in the backfill and used to transport water away from the wall. Drain tiles are typically 4" perforated PVC pipe.

What is a drainage zone?
The drainage zone helps alleviate hydro-static pressure at the back of the block. 3/4" to 1" clean aggregate (crushed rock) is placed a minimum of 12" directly behind the blocks.

What is an expansion joint?
An expansion joint is a space which allows for expansion as to not adversely affect an adjacent structure.

What are fines?
Fines are fine-grained soils, such as clay or silt.

What is friction angle?
It is an angle that describes the rate at which a soils' strength increases under loading. The greater the friction angle of a soil - the lesser the lateral loads on a wall.

What is filter fabric?
It is a geotextile used to filter fines from water. It is commonly placed between the topsoil and the backfill and drainage zones to eliminate the migration of soils into the drainage zone and to help prevent wall face staining.

What is geosynthetic reinforcement?
Typically known as geogrid, it is a high tensile polypropylene or polyester material that helps stabilize the soil mass behind the wall. The number of grid layers and grid lengths are determined by a number of variables; including wall height, type of soil, etc.

What is grade?
Grade is considered to be ground level.

What is a gravity wall?
A gravity wall is able to resist soil pressure by relying only on its mass. This type of wall does not require geosyn-thetic reinforcement.

What is hydrostatic pressure?
It is the pressure exerted on the back of a wall by water in undrained or saturated soils.

What is a leveling pad?
The level surface (gravel or concrete) used to distribute the weight of the stacked blocks over a wider foundation area and to provide a working surface during construction. The leveling pad is typically constructed with granular soil to facilitate compaction.

What is retained soil?
It is the soil, excluding backfill, which is retained by the wall.

What is silt?
Silt is a fine-grained soil.

What is a Stone Column?
It is a continuous vertical column of aggregate material that is formed when the Rockwood block cores are filled. The Stone Column unifies grid and block into an integrated structural system.

What is surcharge loading?
It is a force exerted at the top of wall such as loading from a slope, roadway, parking lot, or building. Surcharge loading should be considered in the design of a wall.

What is a swale?
A ditch or canal used to divert water away from the back of the wall.

What are course-grained soils?
Soils which contain less than 50% passing the #200 sieve by dry weight. Coarse-grained soils are typically more permeable than fine-grained soils (clays and silts); exhibit very little cohesion and plasticity; and maintain their soil strength under adverse moisture conditions.

SAND - Coarse-grained material formed from disintegrated rock. [Sand passes the no. 4 sieve (4.76mm) and is retained on the #200 sieve (0.074mm)].

GRAVEL - Coarse-grained material formed from disintegrated rock. [Gravel passes the 3" sieve (76.2mm) and is retained on the no. 4 sieve (4.76mm)]. Gravels are generally more resistant to erosion than are sands.

What are fine-grained soils?
Soils which contain greater than 50% passing the #200 sieve by dry weight. Fine-grained soils are typically less permeable than coarse-grained soils (sands and gravels); exhibit considerable cohesion and plasticity; and lose their soil strength under adverse moisture condi-tions such as groundwater and surficial infiltration.

CLAY - Fine, flat shaped particles that are invisible to the naked eye and possess both plasticity and cohesiveness.

SILT - Fine, granular particles that are invisible to the naked eye and are nonplastic and noncohesive.

Visit us on the web at: **www.rockwoodwalls.com**
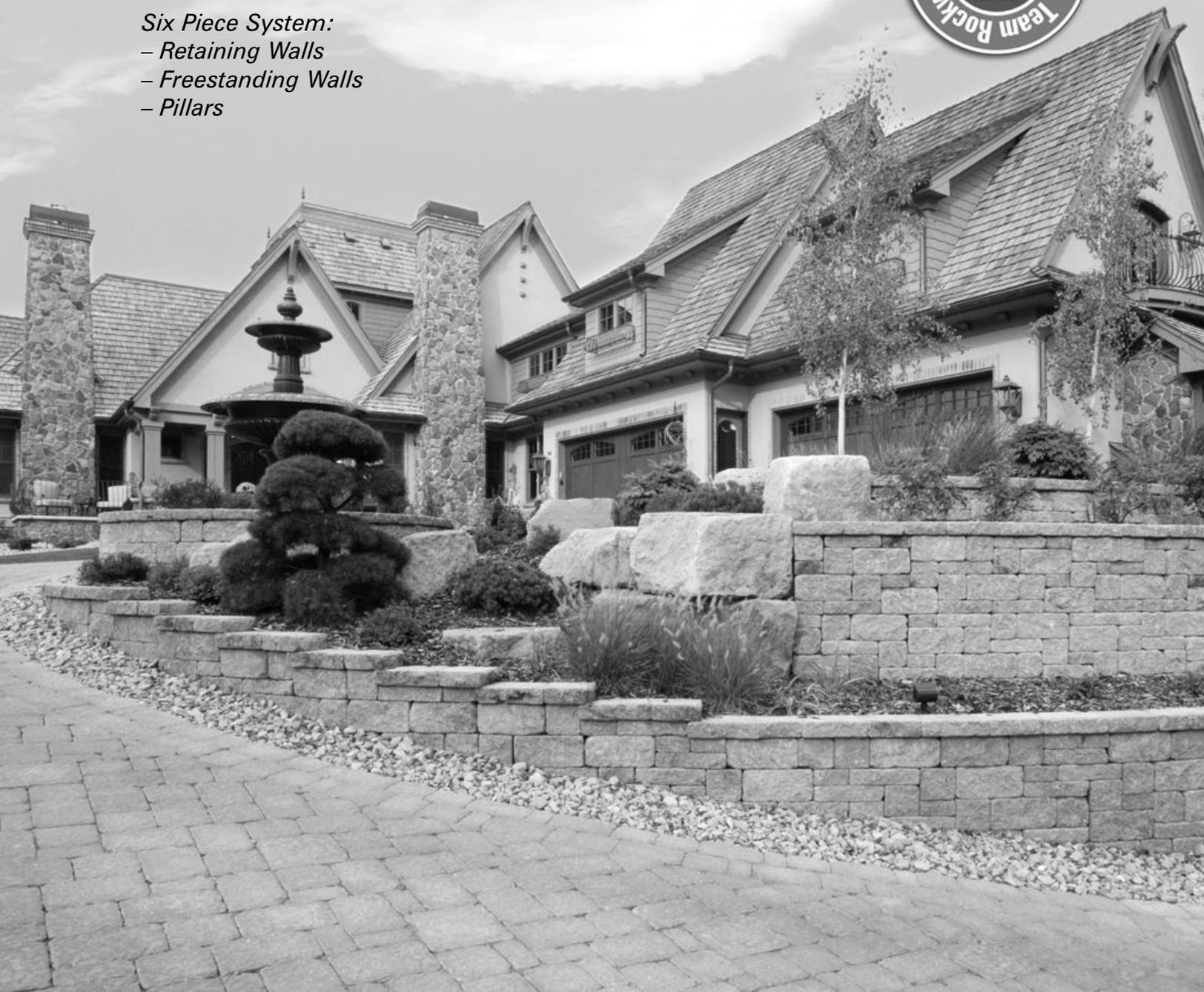
ROCKWOOD®
RETAINING WALLS
A better way.™

Notes:

Vintage™ *Wall Installation Manual*

Six Piece System:
– Retaining Walls
– Freestanding Walls
– Pillars

ROCKWOOD®
RETAINING WALLS
A better way.™

ASP ENTERPRISES
aspent.com
salesasp@aspent.com

St. Louis, MO
636.343.4357
Kansas City, MO
816.554.1191

Omaha, NE
402.861.8579
Wichita, KS
316.393.1554

BOWMAN CONSTRUCTION SUPPLY
bowmanconstructionsupply.com
salesbcs@bowmanconstructionsupply.com

Denver, CO
303.696.8960
Loveland, CO
970.535.0863

Colorado Springs, CO
719.257.7840

QUICK SUPPLY CO.
quicksupplyco.com
salesquick@quicksupplyco.com

Des Moines, IA
515.289.1271

CASCADE GEOSYNTHETICS
cascadegeos.com
salescascade@cascadegeos.com

Portland, OR
971.339.1020

SOLUTIONS WE SUPPLY

GEOSYNTHETICS
Filter Fabrics
Stabilization Fabrics
Geogrids
- Road Grids
- Wall Grids
- Slope Stabilization
Specialty Fabrics
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