

# HIGHLAND® STONE CONSTRUCTION GUIDE - ESTIMATING MATERIALS

## 1. HOW MANY WALL UNITS ARE NEEDED?

Determine the square footage of the total wall, including buried base course. Wall square footage (SF) = length (L) x height (H).

$$\text{SF} \times 1.39 = \text{_____} \# \text{ units}$$

x .71 Freestanding (using of each size)

x .67 Retaining (using of each size)

## 2. HOW MANY CAP UNITS WILL I NEED?

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

$$\text{LI} \div \text{CF} = \text{_____} \text{ caps.}$$

## 3. HOW MUCH GEOSYNTHETIC REINFORCEMENT STRUCTURAL BACKFILL DO I NEED?

Choose the appropriate estimating chart based on your project conditions. For curved walls add 10%

# HIGHLAND® STONE CONSTRUCTION GUIDE - RETAINING WALL

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

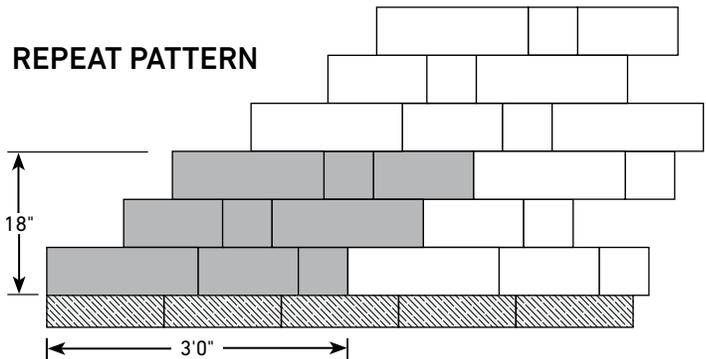
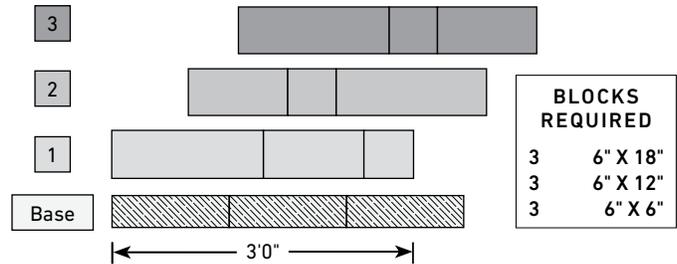
## WHEN TO USE A PATTERN

You can install the Highland Stone wall system in a random pattern using any combination of units. Just avoid vertical lines that span more than 1 foot in height.

## 6" MULTIPIECE RETAINING WALL SYSTEM

This pattern consists of an equal number of blocks of each size.

18-INCH BY 3-FOOT PATTERN = 4.5 SQ. FT.



## BUILDING THE WALL

Units can be placed in any order to form an aesthetically pleasing layout. The simplest is one that incorporates large, medium and small units. The units should be installed so the ends are in complete contact with each other. Remember to keep the wall on bond by placing units in a staggered relationship to the course beneath. Repeat this process to complete the wall. Glue the top two courses and caps in place with a concrete adhesive.

Base Course



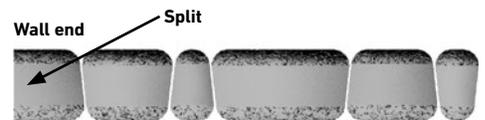
Note: Units are tapered; alternate narrow and wide faces for a straight line.

Next course



## ENDING A WALL

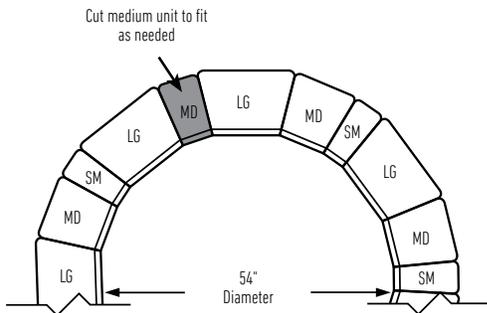
Split\* a large unit into pieces sized as needed. Do not use pieces smaller than 6-inches-wide. If needed, cut the second-to-last piece and make the last piece the appropriate size. Smaller pieces should be glued into place with a concrete adhesive. After splitting the unit, use a hammer and chisel to create a rounded appearance to match the manufactured split blocks.



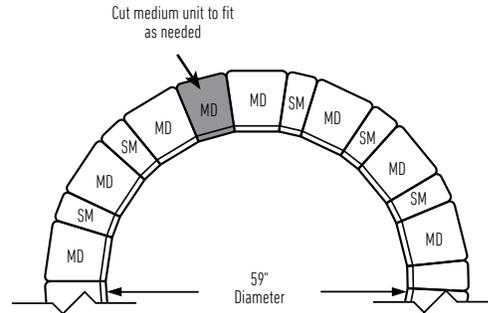
\*NOTE: To split a block, use a hydraulic splitter or split manually by using a hammer and chisel to score the block on all sides. Pound the chisel on the same line until the block splits. If partial unit sides are not exposed, use a saw with a diamond blade to achieve a tighter fit.

# RADIUS PATTERNS

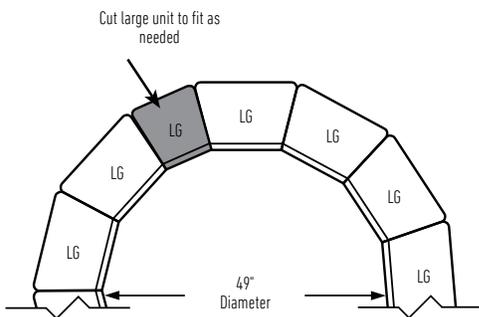
PATTERN	NUMBER OF UNITS AND REPEAT	INSIDE DIAMETER	OUTSIDE RADIUS
1	8 SMALL / 8 MEDIUM / 7 LARGE	54"	39"
2	13 SMALL / 15 MEDIUM	59"	41.5"
3	13 LARGE	49"	36.5"
NOT SHOWN	1 MEDIUM / 22 LARGE	114"	69"



**PATTERN 1**



**PATTERN 2**



**PATTERN 3**

**KEY**  
 SM = Small  
 MD = Medium  
 LG = Large

**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.

# HIGHLAND® STONE CONSTRUCTION GUIDE - FREESTANDING WALL

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

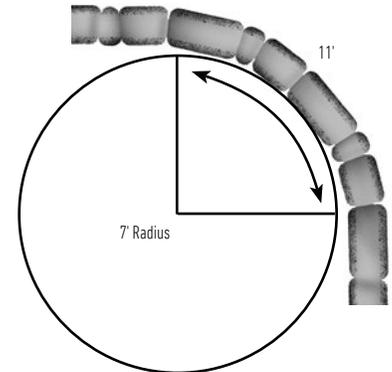
## STRUCTURAL DESIGN ELEMENTS

Structural design elements must be used if a freestanding wall is more than 10 feet long. Structural design elements include:

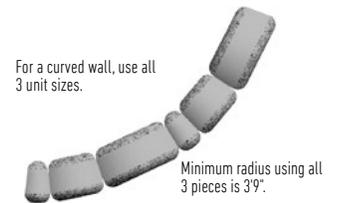
- Curved walls
- Freestanding wall jog
- 90-degree corner
- Columns

## CURVED WALLS

Add stability and a natural flow to walls with curves. While units can be oriented to make a curve, it may be necessary to make cuts with a circular saw or splitter. As a rule, the smaller the units, the tighter the radius. Conversely, the larger the units, the larger the radius. Use approximately the same number of units for each course. The approximate minimum radius the system can turn, using all three pieces without cutting, is 3 feet 9 inches measured to the outside face of the wall.

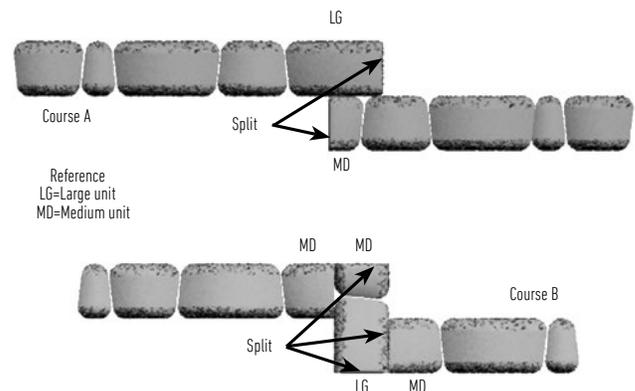
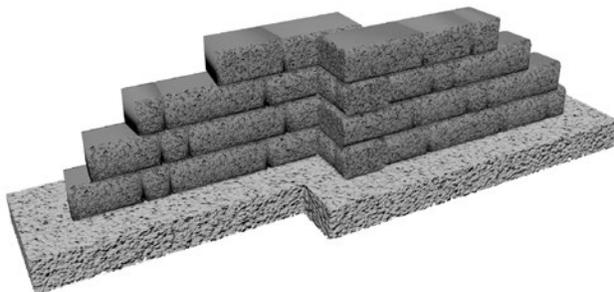


A radius of 7 feet or less is considered a design element if it creates a 90-degree change in the direction of the wall.

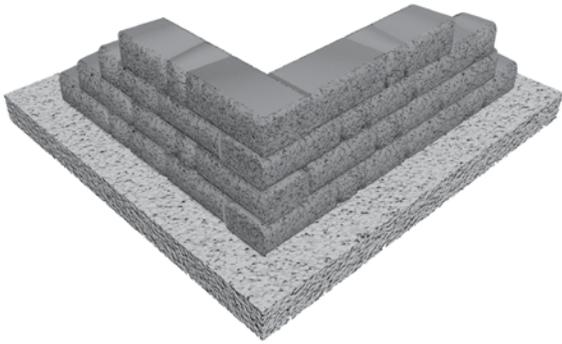


## FREESTANDING WALL JOG

Jogs are used to break up straight lines and add stability to walls. Split\* units as needed. Use hammer and chisel to round split faces. Glue all courses of jog with a concrete adhesive.

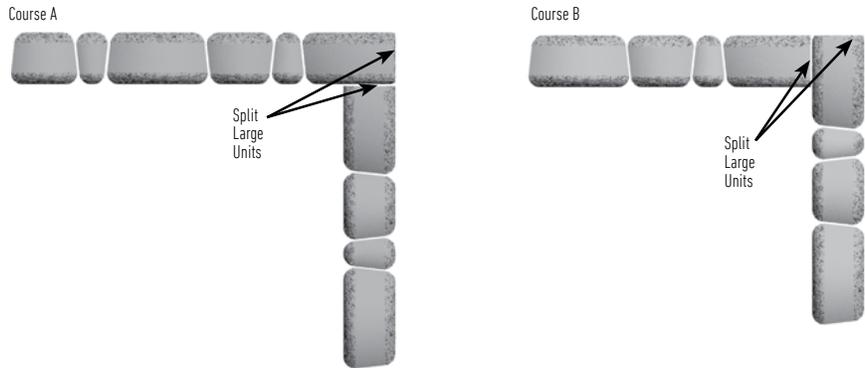


**NOTE:** To split a block, use a hydraulic splitter or split manually by using a hammer and chisel to score the block on all sides. Pound the chisel on the same line until the block splits. If partial unit sides are not exposed, use a saw with a diamond blade to achieve a tighter fit.



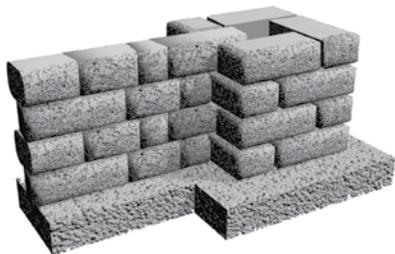
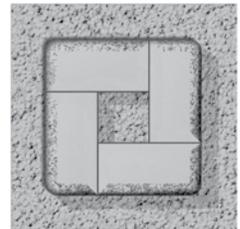
## 90-DEGREE CORNER

To create a 90-degree corner in a straight wall, make a third side to a Highland Stone® 6" large freestanding unit by splitting it to the appropriate dimension. Use only large units to assure connecting units are on bond. Alternate the direction the units face with each course. After splitting the unit, use a hammer and chisel to create a rounded appearance to match the manufactured split blocks. Glue all corner courses with a concrete adhesive.



## COLUMNS

When used with a freestanding wall, a column increases wall stability. Columns can be located in the middle or at the end of a wall. The open space in the center of a column permits reinforcement or electrical wiring if needed. Placing fixtures on columns is also a great way to incorporate lighting. The column leveling pad should extend 6 inches beyond each column edge and be 6 inches deep after compaction.



## COLUMN AT END OF WALL — CENTERED

To build columns at the end of a wall, cut one column unit in half for the second, fourth and additional even-numbered courses. Stack column units in a rotating pattern for each course so that the bond is staggered. One column unit half is used every two courses. Glue each course of column units with a concrete adhesive. Integrate wall into column as shown to increase stability.

