



Rivercrest™ Wall System

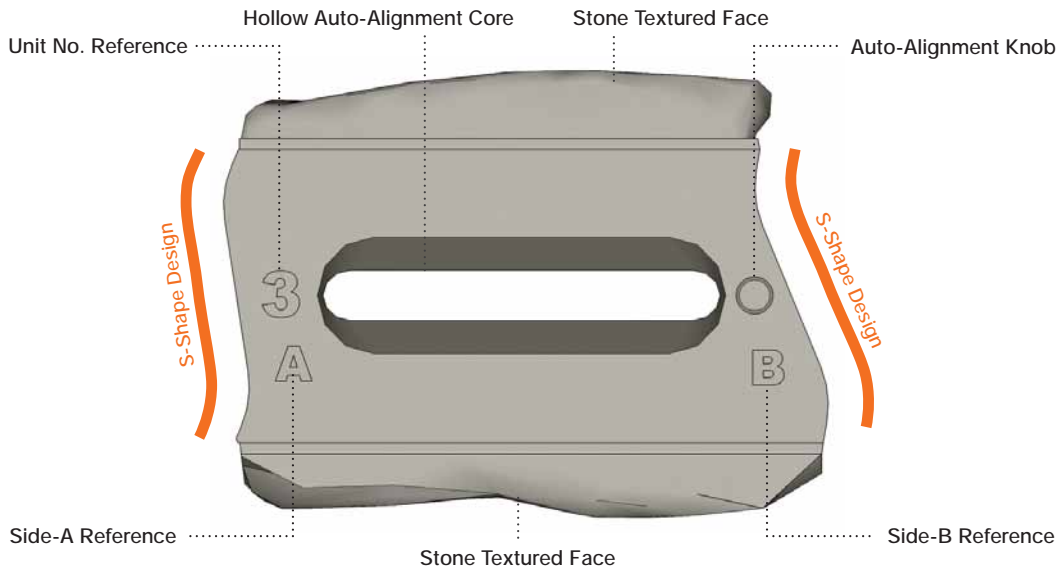
Installation Guide

Straight or curved garden, retaining & seat walls | steps | pillars | planters | tree-rings | fireplaces | fire-pits | water features | grill islands | BBQ's

UNILOCK®

DESIGNED
TO CONNECT

The Rivercrest™ Wall System incorporates engineered, patent pending design with natural beauty and contractor friendly design features. For the professional landscaper or do-it-yourselfer, Rivercrest offers the look & character of natural flagstone but without the cost and difficulty of installation.



Rivercrest Wall System integrates a collection of sizes including 4 standard, 4 jumper, 2 corner and 1 coping units, featuring over a hundred distinct stone face textures. The unique shape, array of unit sizes and random natural stone textures allows you to create virtually any design you can imagine. Installation and estimation is simple.



Standard No.1
20 x 23-25 x 5.7cm
8" x 9-10" x 2.25"



Standard No.2
31 x 23-25 x 5.7cm
12" x 9-10" x 2.25"



Standard No.3
31 x 23-25 x 5.7cm
12" x 9-10" x 2.25"
Integrated Alignment Knob



Standard No.4
42 x 23-25 x 5.7cm
16.5" x 9-10" x 2.25"
Integrated Alignment Knob



Jumper No.1*
20 x 23-25 x 11.4cm
8" x 9-10" x 4.5"



Jumper No.2*
31 x 23-25 x 11.4cm
12" x 9-10" x 4.5"



Jumper No.4*
42 x 23-25 x 11.4cm
16.5" x 9-10" x 4.5"



Corner Jumper*
31 x 23-25 x 11.4cm
12" x 9-10" x 4.5"



Long Corner
31 x 23-25 x 5.7cm
12" x 9-10" x 2.25"



Short Corner
25 x 23-25 x 5.7cm
10" x 9-10" x 2.25"



Long Coping
56 x 28 x 5.7cm
22" x 11" x 2.25"

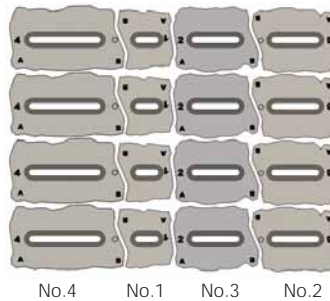
*Jumper units are not available as a stock item in all regions. Please check with your area representative for availability.

Stones & Bundles	Face ft/ Bundle	Face ft/ Unit	Lin ft/ Bundle	Lin ft/ Unit	Units/ Bundle	Units/ Face ft	Layers/ Bundle	Lbs/ Unit	Lbs/ Bundle
Random Wall Bundle	23	-	121.7	-	128	-	8	-	1902
— Standard No.1	3.5	0.11	19	0.6	32	9.1	-	9.4	-
— Standard No.2	5.75	0.18	30.4	0.95	32	5.6	-	14.7	-
— Standard No.3	5.75	0.18	30.4	0.95	32	5.6	-	14.7	-
— Standard No.4	8	0.25	41.9	1.3	32	4	-	20.6	-
Jumper Wall Bundle	23	-	60.9	-	64	-	4	-	2720
— Jumper No.1	3.5	0.22	9.5	0.6	16	4.5	-	30	-
— Jumper No.2	11.5	0.36	30.4	0.95	32	2.8	-	40	-
— Jumper No.4	8	0.5	21	1.3	16	2	-	60	-
Corner Jumper Bundle	12.2	0.38	32.54	1.01	32	2.63	-	40	1280
Corner Bundle	20.92	-	-	-	64	-	4	-	1233
— Long Corner	16.1	0.33	85.92	1.79	48	2.99	-	20.4	-
— Short Corner	4.8	0.3	25.44	1.59	16	3.33	-	16.7	-
Long Coping	16.7	0.35	89.1	1.86	48	2.87	8	45	2152

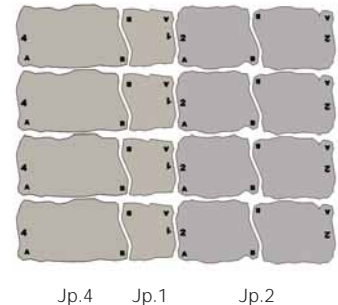
The Rivercrest Wall System has five (5) pallet configurations containing separate units. All Standard and Jumper Units come bundled and randomized for quick easy installation. *Refer to Rivercrest Estimation Guide for more information on pallet quantities.*



Standard Unit Pallet



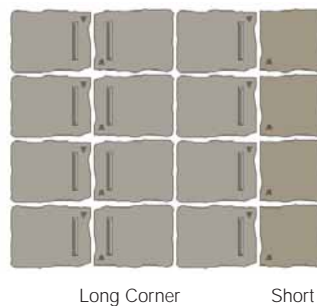
Jumper Unit Pallet*



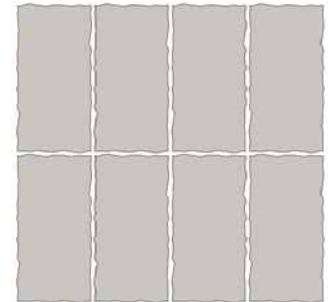
Corner Jumper Unit Pallet*



Corner Unit Pallet



Long Coping Unit Pallet

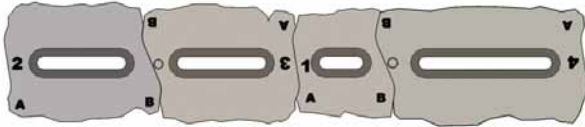


Note: Corner and Coping units can also be mixed with standards units within a wall. *Jumper units are not available as a stock item in all regions. Please check with your area representative for availability.

There are no specific laying patterns with the Rivercrest Wall System. Simply keep the following guidelines in mind and use up equal numbers of all units. If you run into a conflict where a knob does not fall into a core, just knock it off with a chisel and place a small amount of adhesive down or put a different unit down that works.

For simplicity, you could lay the units as they come off the skid (No.4,1,3,2) and reverse the order every other course to avoid any conflicts. This would, however, reduce the variable look in the wall.

straight wall • align A-A / B-B

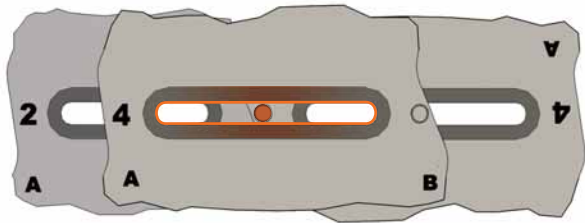


curved wall • align A-B / B-A



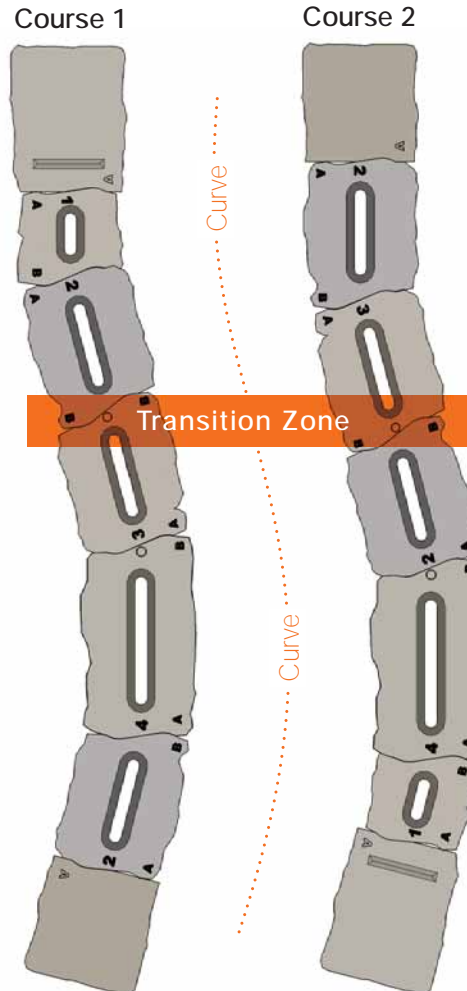
auto-alignment

With each consecutive course, alternate stones with & without alignment knobs. This unique alignment system helps you easily align units visually, and provides a mechanical system when building retaining walls.



curve transitions

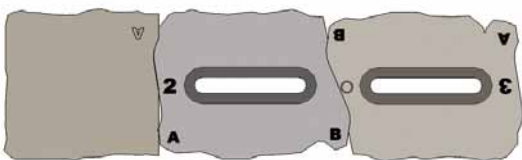
The transition from a curve to a straight wall should occur as close as possible to the transition zone in the row below.



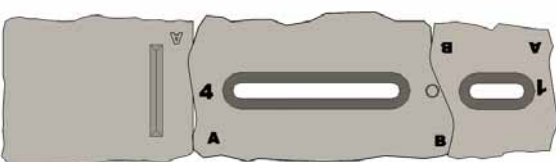
starting a wall

Alternate between the Long Corner and Short Corner units on alternating courses to start a running bond pattern, this will minimize the chance of alignment knob not finding a core.

Course 1



Course 2



unit increment

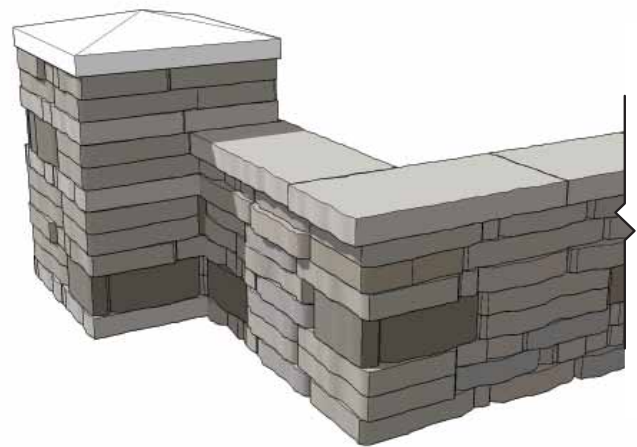
Unit No.4 and Unit No.1 are the same length, 580mm (23"), as the combination of Unit No.3 and Unit No.2. This increment can be used to plan a layout between two set points such as corners. Make sure to take the length of a long corner, 312mm (12"), and a short corner, 250mm (10"), into account as these will be at either end.



jumper units

In addition to being used to enhance sections of wall, Jumper units can also be used in a variety of different ways within the Rivercrest Wall System. The Corner Jumper has faces on 3 sides, making it perfect for incorporating into pillars and corners. The unit can also be used when starting and ending seat walls.

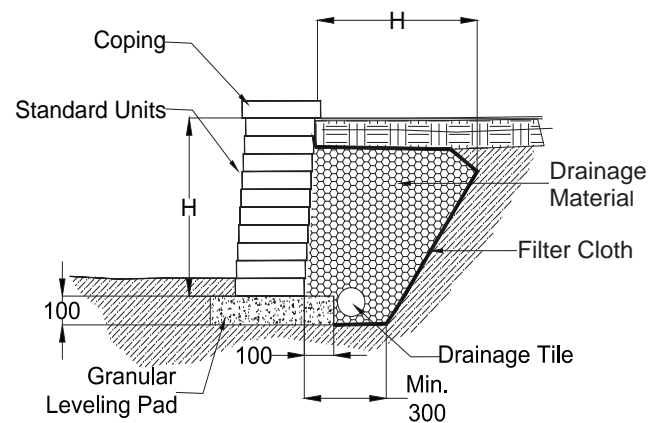
The number of jumper units you require will be determined by the look you wish to achieve, refer to Estimation Guide for more details.



retaining wall construction

Recommended for retaining walls 600mm (2.0ft) and under as a gravity wall (*no Geogrid*). Higher walls may be constructed utilizing geogrid*. Wall to be constructed on a 100mm (4") by 500mm (20") granular footing with a min. of 1 course embedded.

A drainage layer comprised of free draining material, with a depth equal to the height of the wall [min 300mm (12")] is required. A minimum 100mm (4") perforated drainage tile is also required. Over compaction of the drainage layer must be prevented.



Measurements in millimeters

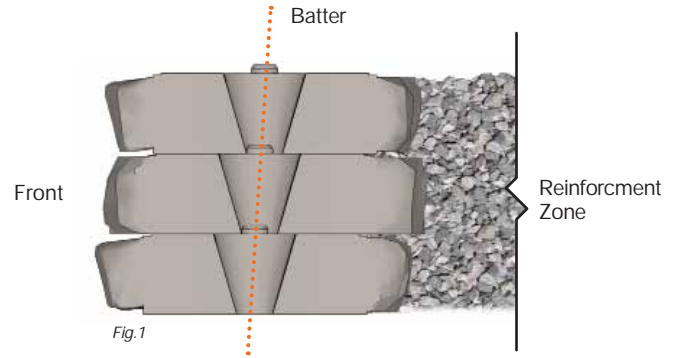
Note: It is recommended that all units be secured with an approved concrete adhesive. *For information on height limitations using geogrid, please contact Risi Stone Retaining Wall Systems @ 1.800.626.WALL or www.risistone.com

When building Rivercrest retaining walls higher than 2.0 ft (0.6m) in height, the use of an approved Polyester Geogrid reinforcement is required. Geogrid must be properly installed according to manufacturer's specifications. Many building codes require an engineered design for retaining walls exceeding 3.0 ft (1.0m) in height.*

The specific wall design will determine the precise Geogrid requirements. However a good rule of thumb when using Rivercrest, is that the Geogrid (length - including the 10" unit width) should extend back into the reinforcement zone at least 70% of the wall height, with Geogrid layered vertically every 5 – 6 courses (Approx. 12").

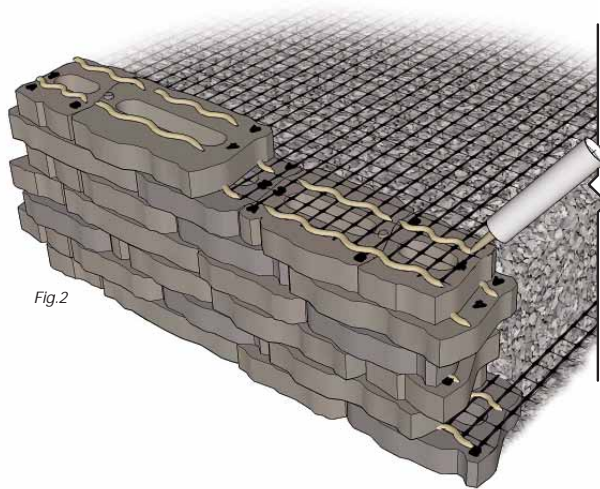
A high quality, washed ¼" angular chip (no fines) aggregate infill material is recommended for the "reinforced zone" behind the wall as this does not require significant compaction immediately next to the units.

When constructing a retaining wall with Rivercrest, the alignment core must be positioned directly touching the front of the alignment knob in the unit below, as shown (Fig.1). Therefore when installing, all units must be pushed "back" toward the reinforcement zone. This will guarantee the wall a very slight lean (batter), which is preferred when building higher retaining walls.



There are 2 options available to properly construct a retaining wall with the Rivercrest Wall System. Either option will achieve the necessary connection of the Geogrid to the Rivercrest units, and maximize shear capacity.

1 using adhesive Manufacturer Recommended



Construct the wall as shown in Fig.1. For each course secure the wall by placing a bead of approved Concrete Adhesive along the top surface on the front and back of the units as shown (Fig.2). For Geogrid layers, lay the Geogrid ensuring it is secured in both beads of adhesive. Concrete adhesive must be applied in accordance with manufacturer's specifications.

2 using gravel fill



For each course, fill the unit alignment cores flush to the top with a washed ¼" angular chip aggregate. For Geogrid layers, lay the Geogrid so that the edge extends at least 1" past the alignment core towards the front edge of the unit.

A washed ¼" angular chip aggregate is recommended because it is self-compacting, easy to handle, and has excellent frictional properties that interlock with the Geogrid.

*Note: Contact Ristone Retaining Wall Systems @ 1.800.626.WALL or www.ristone.com for more information & height limitations using Geogrid.

1 first course

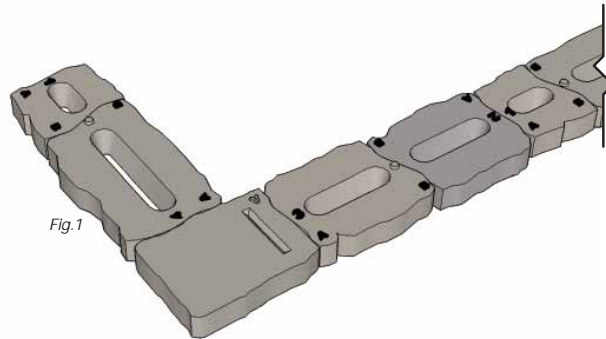


Fig.1

When constructing corners, abut the Long Corner unit with a Standard unit Side A.

2 second course

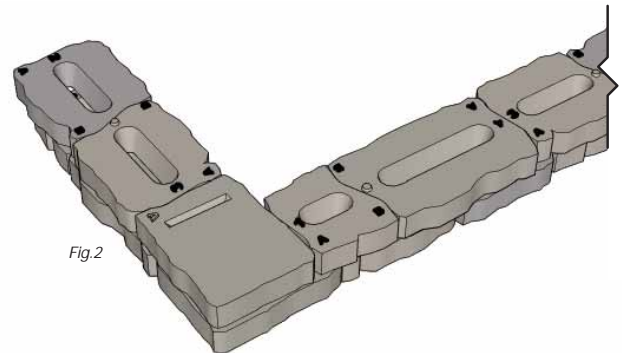


Fig.2

For the next course alternate the corner unit direction to automatically change the bond pattern. Continue to build the corner repeating Steps 1-2 or incorporate Step 3.

3 coping as a corner

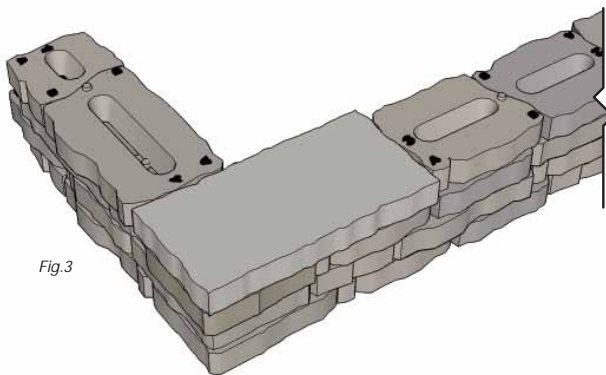
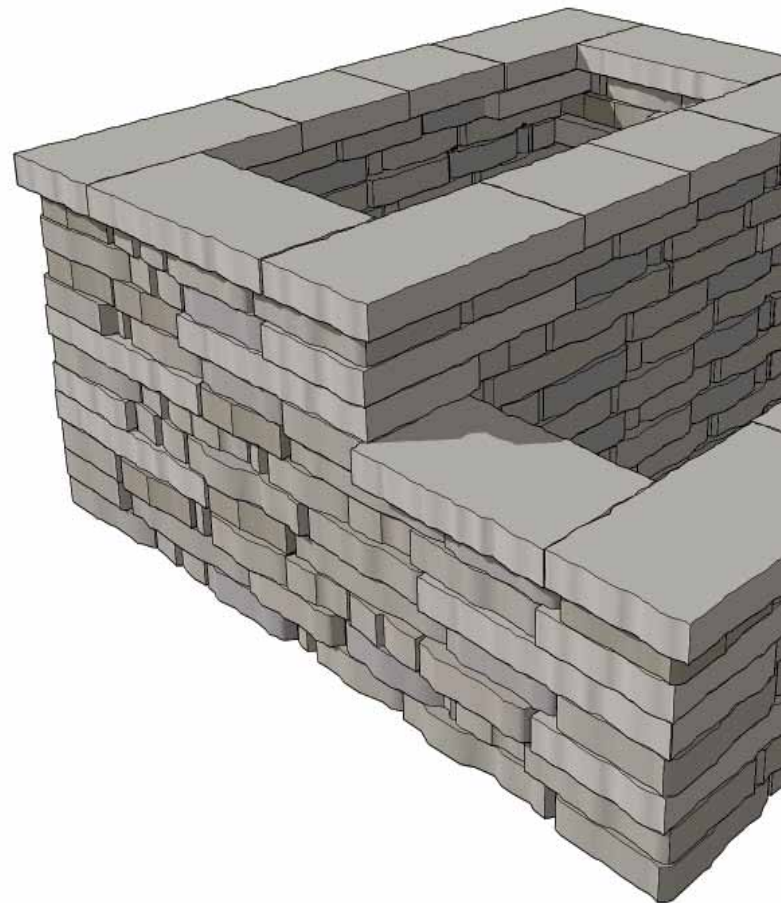


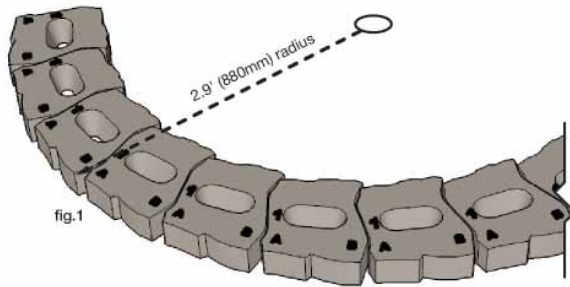
Fig.3

Coping units or short corner units may also be integrated into the corner to enhance the appearance and add stability. When constructing a seat wall, centre align the coping unit with the unit below; it will protrude slightly but add to the rustic appearance of the wall. In retaining walls the coping unit may be set back into the reinforcement zone, so that the front & side are flush with the rest of the corner. Simply remove the alignment knob with a chisel if there is a conflict.



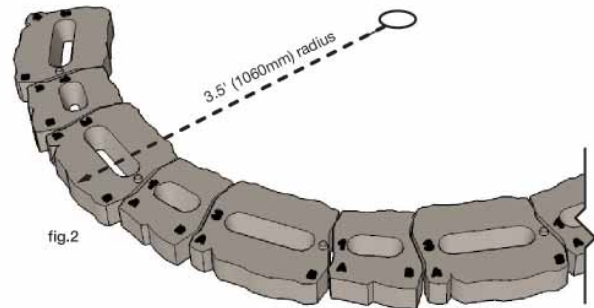
Note: All components should be secured with approved concrete adhesive.

1 small curve/circle



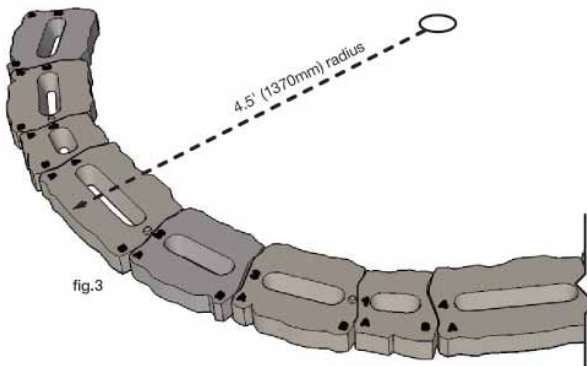
Use this pattern (fig.1) to create a curve or circle with an outside radius of 2.9' (880mm). Using only Standard No.1 units, align Side A+B / B+ A.

2 medium curve/circle

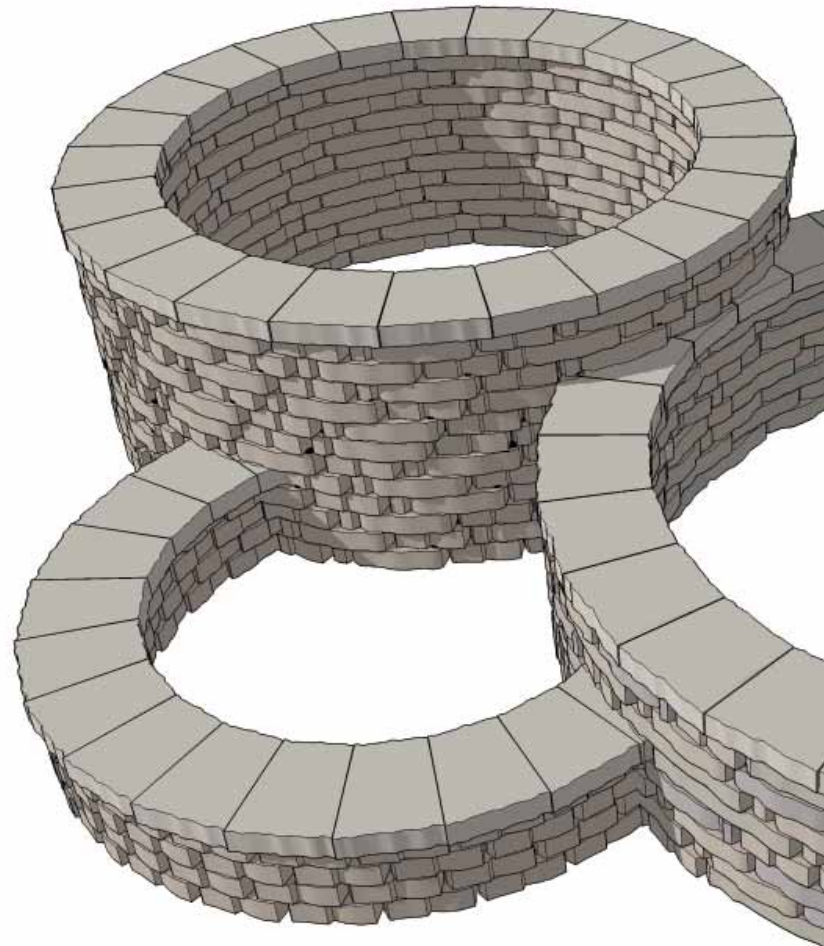


Use this pattern (fig.2) to create a curve or circle with an outside radius of 3.5' (1060mm). Using only Standard No.1 & No.3 units, alternate units and align Side A+B/B+A.

3 large curve/circle

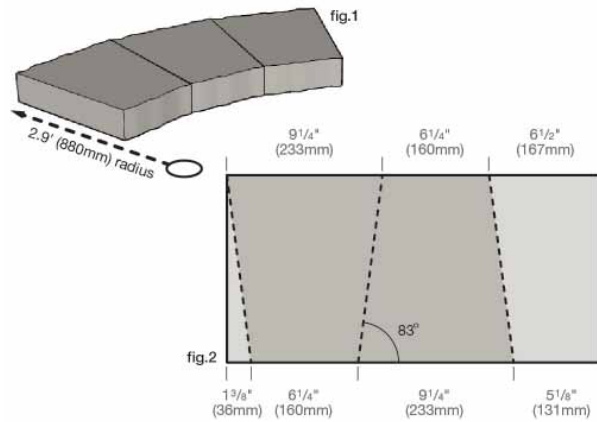


Use this pattern (fig.3) to create a curve or circle with an outside radius of 4.5' (1370mm). Using Standard No.1, No.2, No.3 & No.4 units, align Side A+B/B+A. A unit order of 1»4»2»3 will ensure an alignment knob on alternating units.



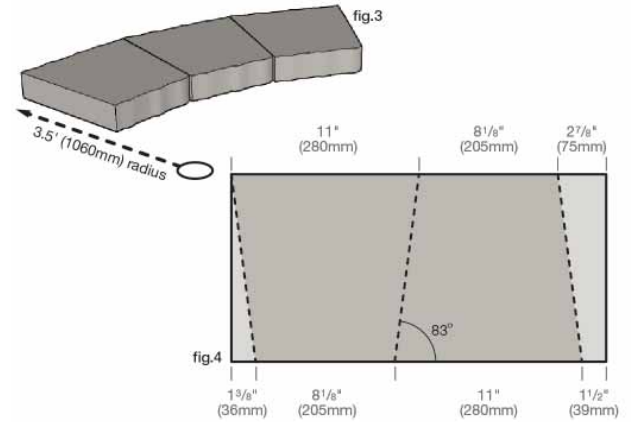
Note: All components should be secured with Approved Concrete Adhesive. With the exception of small curves & circles, always try to alternate between units with and without alignment knob.

1 small curve/circle



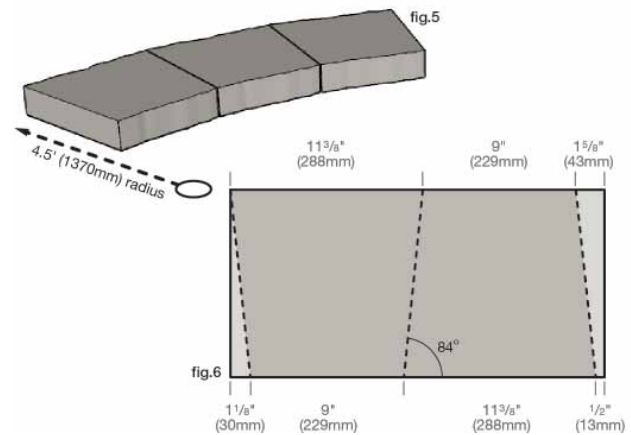
Use this pattern (fig.1) to create a curve or circle with an outside radius of 2.9' (880mm). Using only Standard No.1 units, align Side A+B / B+A.

2 medium curve/circle

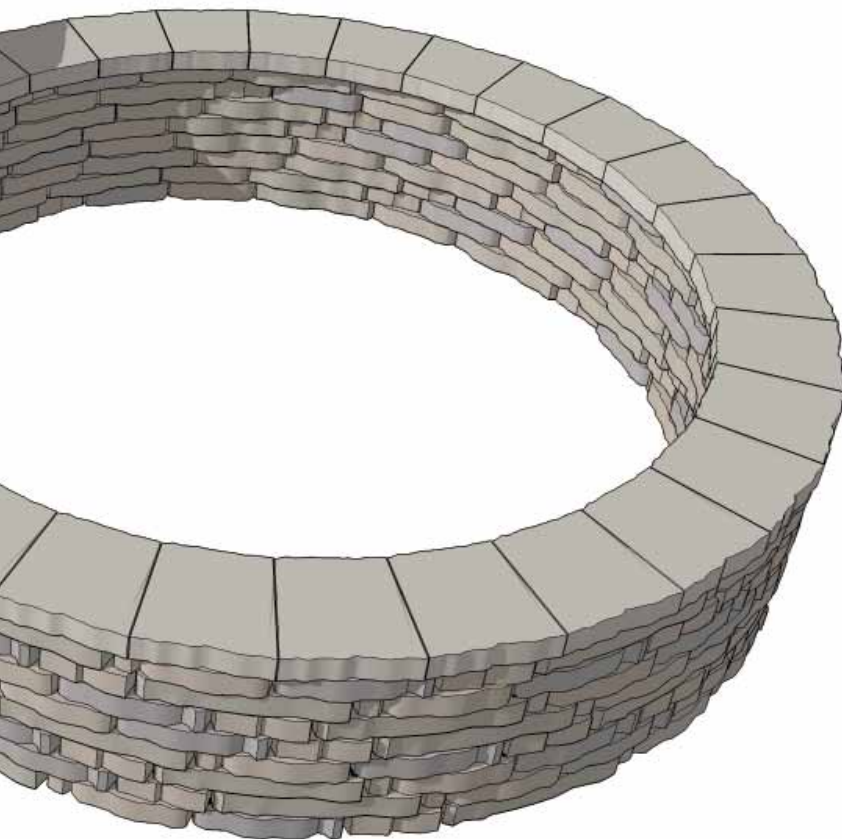


Use this pattern (fig.2) to create a curve or circle with an outside radius of 3.5' (1060mm). Using only Standard No.1 & No.3 units, alternate units and align Side A+B/B+A.

3 large curve/circle

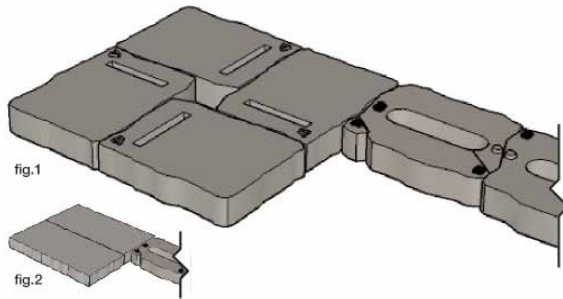


Use this pattern (fig.3) to create a curve or circle with an outside radius of 4.5' (1370mm). Using Standard No.1, No.2, No.3 & No.4 units, align Side A+B/B+A. A unit order of 1»4»2»3 will ensure an alignment knob on alternating units.



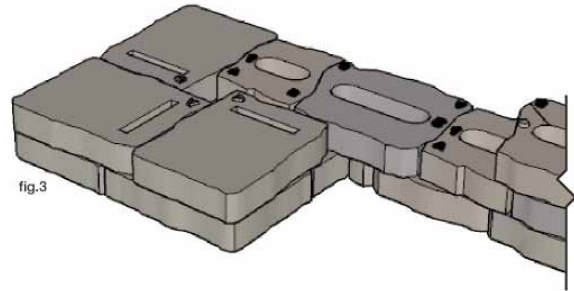
Note: All components should be secured with approved concrete adhesive.

1 non-integrated layer



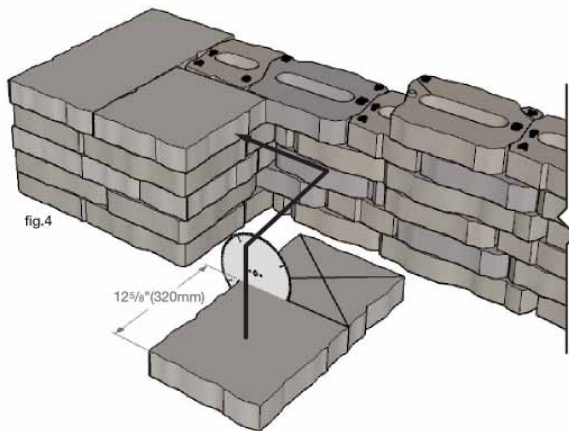
Create pillar base by using No. 4 Long Corner units as shown (fig. 1) or No. 2 Long Coping units (fig. 2). Using a Standard unit (Side A), abut the seat wall layer flush to pillar edge.

2 integration into corner unit layer

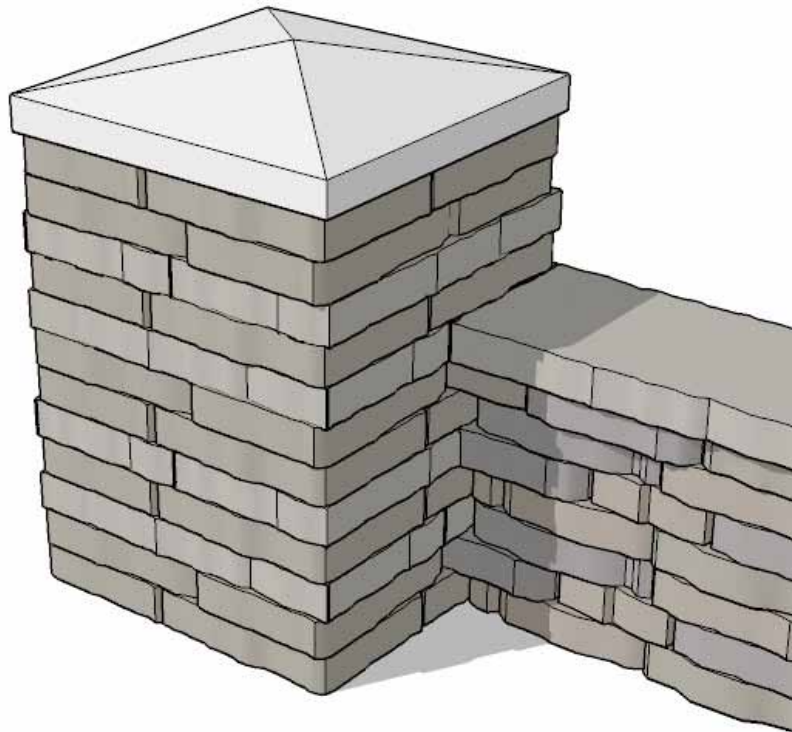


Place 3 Long Corner units as shown (fig. 3) and abut a Standard No. 4 or No. 1+2 unit so that the seat wall is now integrated into the pillar. Continue to build pillar/seat wall by randomly using either integrated or non-integrated layers.

3 integration into coping unit layer

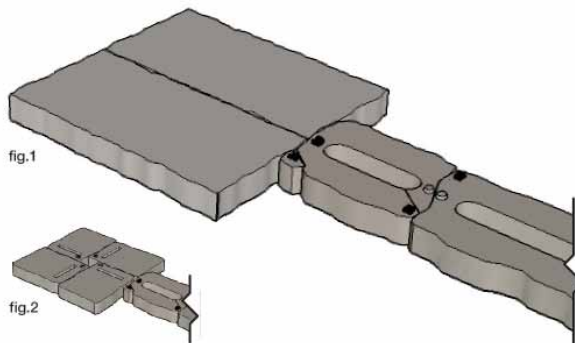


Place a Long Coping unit as shown (fig. 4) and abut a Standard No. 4 or No. 1+2 unit so that the seat wall is now integrated into the pillar. To finish, cut another Long Coping unit to length, measuring fit to accommodate the Standard unit rock face, approx. 12 5/8" (320mm). Continue to build pillar/seat wall by randomly using either integrated or non-integrated layers.



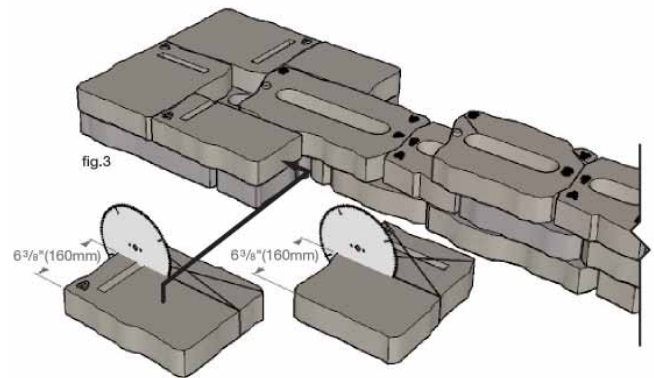
Note: All components should be secured with approved concrete adhesive.

1 non-integrated layer



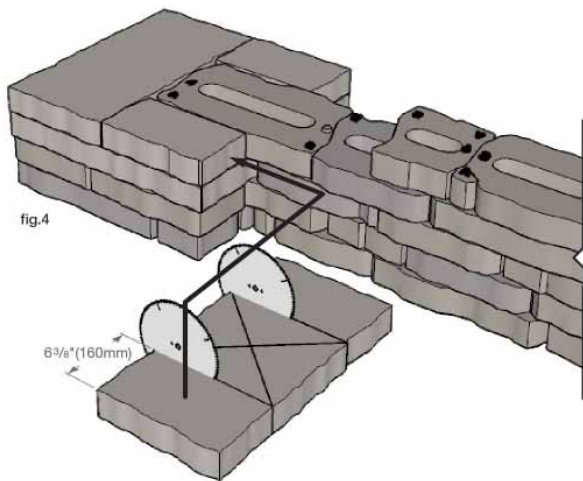
Create pillar base by using 2 Long Coping (fig.1) or 4 No.4 Long Corner (fig.2). Using a Standard unit (SideA), abut the seat wall to the centre of the pillar.

2 integration into corner unit layer

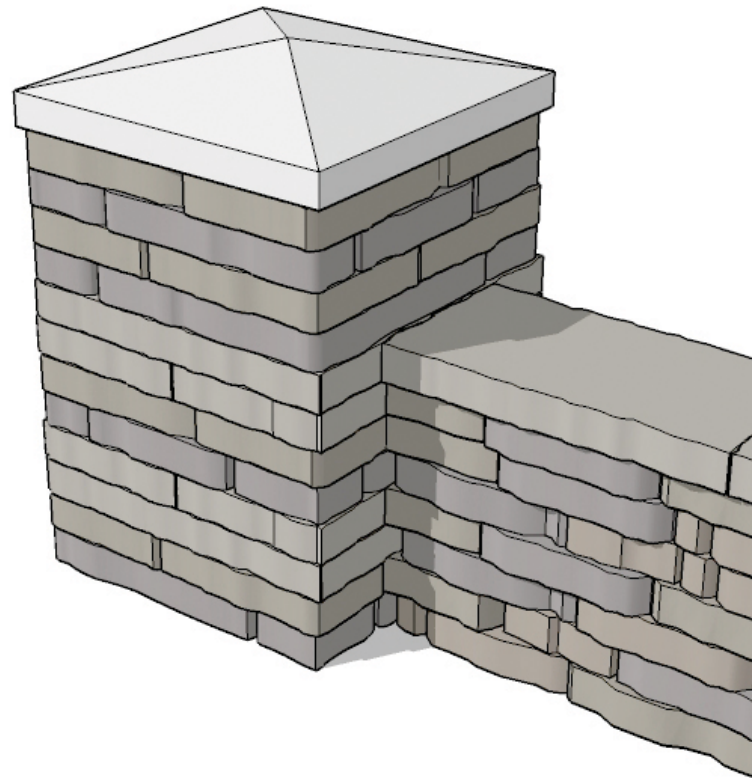


Place 2 Long Corner units as shown (fig.3) and abut a Standard No.4 unit so that the seat wall is now integrated into the pillar. To finish, cut 2 Long Corner units to length, measuring fit to accommodate the Standard unit rock face, approx. 6 3/8"(160mm). Continue to build pillar/seat wall by randomly using either integrated or non-integrated layers.

3 integration into coping unit layer



Place a Long Coping unit as shown (fig.4) and abut a Standard No.4 unit so that the seat wall is now integrated into the pillar. To finish, cut both ends off another Long Coping unit, measuring fit to accommodate the Standard unit rock face, approx. 6 3/8"(160mm). Continue to build pillar/seat wall by randomly using either integrated or non-integrated layers.



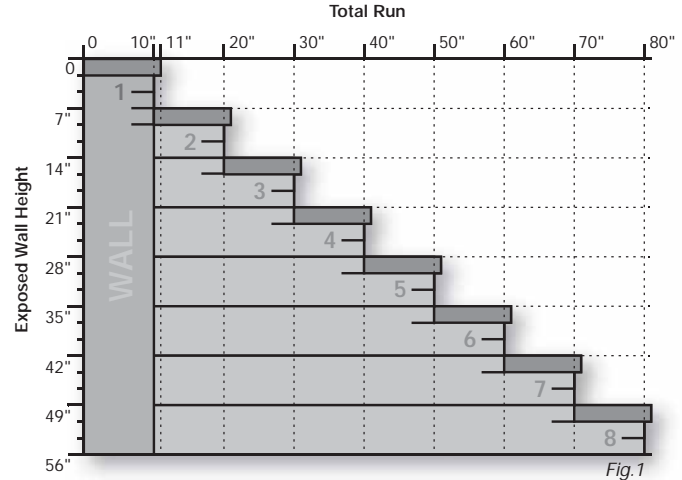
Note: All components should be secured with approved concrete adhesive.

The Rivercrest wall system has been designed to have a comfortable step tread depth of 11" (280mm) and a riser height of 7" (180mm). Use the height of the exposed wall and the chart (fig. 1) or formula to calculate the number of steps and the Total Run you will require.

When building Rivercrest retaining walls higher than 2.0 ft (0.6m) in height, the use of an approved Polyester Geogrid reinforcement is required.

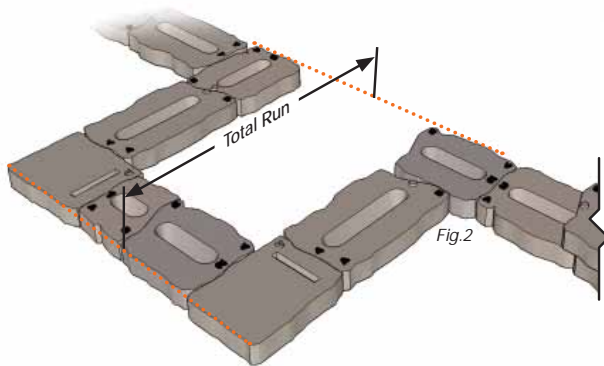
Refer to *Geogrid Installation* for more information.

A high quality, washed ¼" angular chip (no fines) aggregate infill material is recommended for the Zone under the steps to ensure proper compaction. Geogrid reinforcement is also recommended to add support and prevent settling issues.



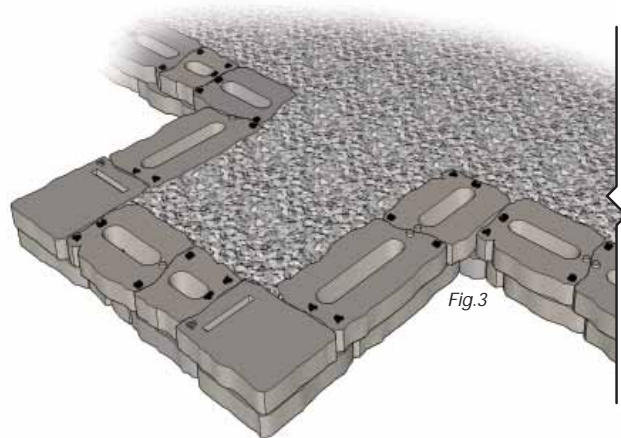
$$\frac{\text{Exposed Wall Height}}{7" (180\text{mm})} = \frac{\quad}{\text{\# of Steps (Rounded Up)}} \times 10" (255\text{mm}) = \frac{\quad}{\text{Total Run}}$$

1 determine base size/layout



Use the height of the exposed wall and the chart (fig. 1) or formula to calculate the number of steps and the Total Run you will require. Using the Total Run, measure out from the back of the wall unit and place a mark. This is where the front of the first step support unit will go.

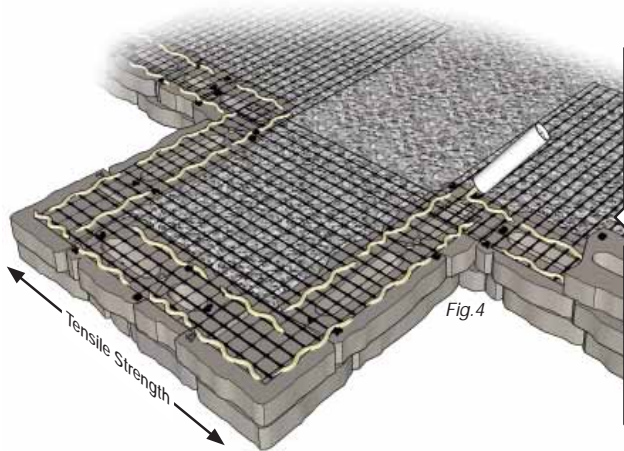
2 gravel fill



Continue the next course as shown (fig. 3), integrating stones into the wall alternating between left and right side. At the course just below the step tread, fill the reinforced zone level with a washed ¼" angular chip gravel.

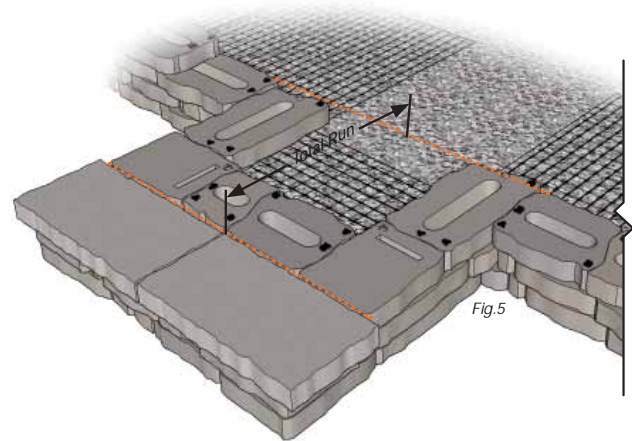
Note: Always check with your local Building Code for min/max riser, tread dimensions, railing requirements and minimum embedment depth prior to planning out your steps. All components should be secured with approved concrete adhesive.

3 geogrid reinforcement

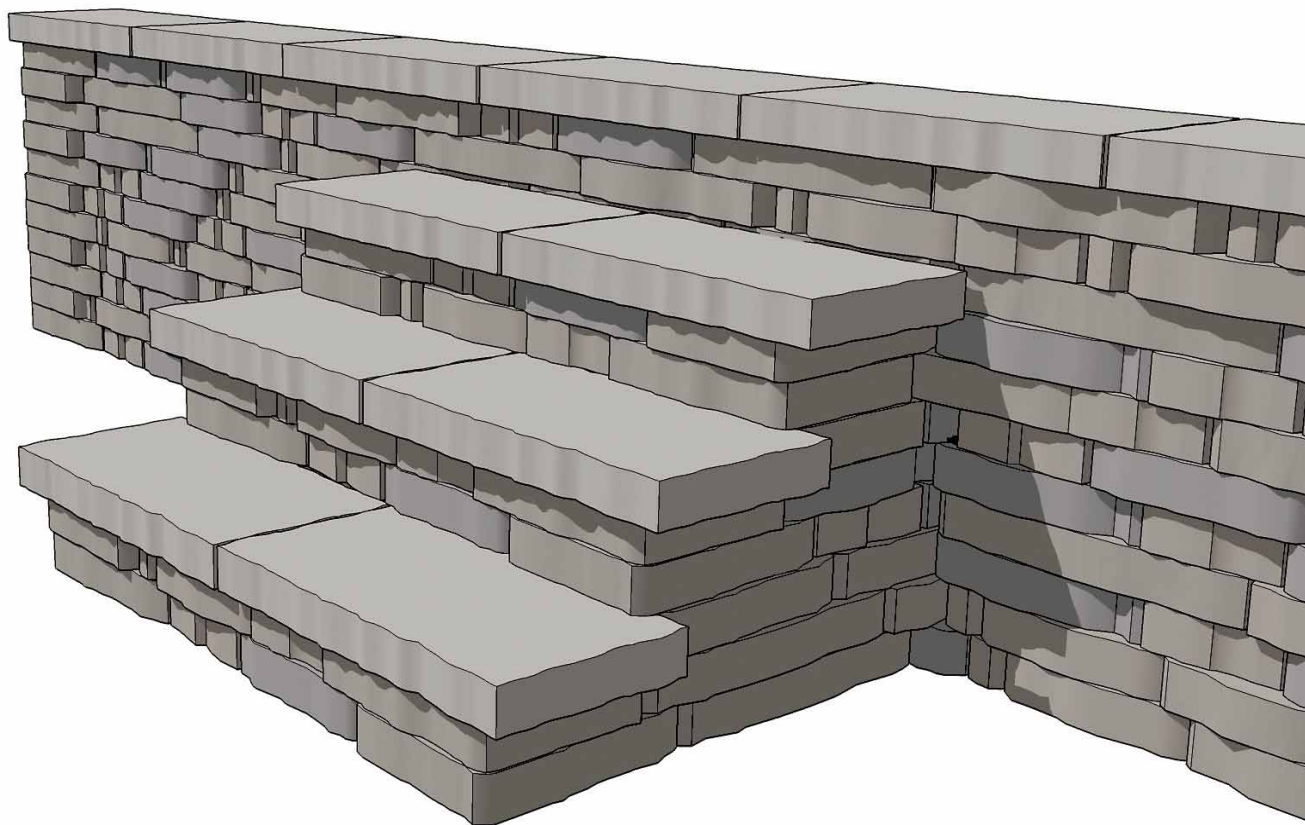


Using approved concrete adhesive, glue a layer of Geogrid reinforcement so the tensile strength is aligned horizontally along the stairs (perpendicular to the sidewalls), ensuring it is firmly embedded in both beads of adhesive. This layer will help support the stairs above against settlement.

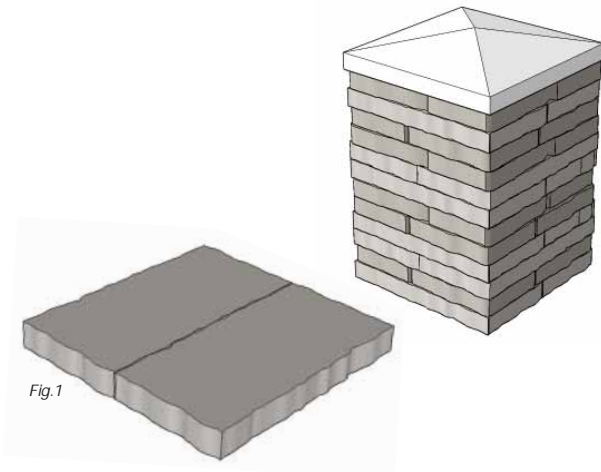
4 positioning the next step



Use the remaining wall height and the chart (fig.1) or formula to calculate the Total Run for the next step. Using the Total Run, measure out from the back of the wall unit, this is where the front of the base for the next step will go. This step is especially important with higher retaining walls that have batter. Next, abut the coping units to the base units to create your tread, there should be no more than 1" (25mm) overhang. Repeat steps 2-4



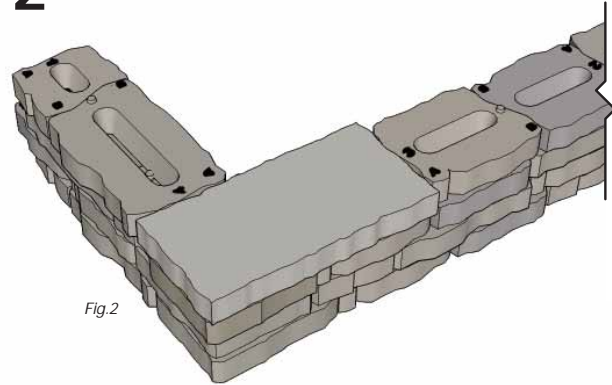
1 in a pillar



When constructing pillar coping units should be used throughout to break-up repeating bond patterns. A Coping layer should be place every 2-3 layers.

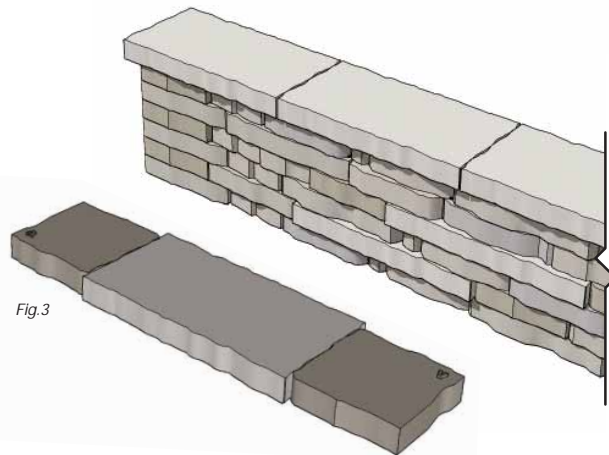
For more information on constructing pillars see Integrated pillar guide

2 as a corner



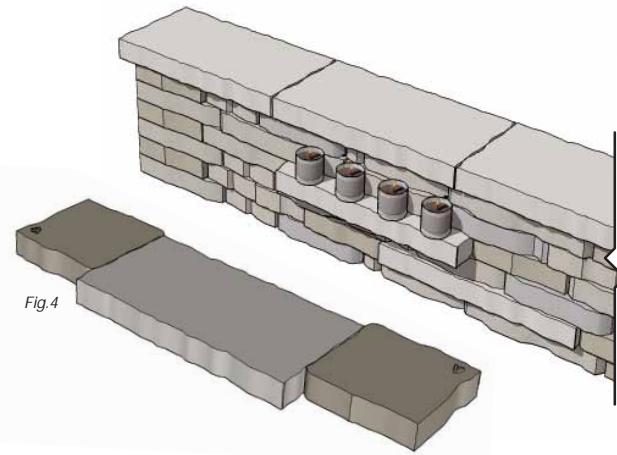
Coping units may also be integrated into the corner to enhance the appearance and add stability. When constructing a seat wall, centre align the coping unit with the unit below; it will protrude slightly but add to the rustic appearance of the wall. In retaining walls the coping unit may be set back into the reinforcement zone, so that the front & side are flush with the rest of the corner. Simply remove the alignment knob with a chisel if there is a conflict.

3 in a wall



When Integrating a Coping unit into a seat wall, centre align the coping unit with the unit below; it will protrude slightly but add to the rustic appearance of the wall. In retaining walls the coping unit may be set back into the reinforcement zone, so that the front is flush. Abut with short corner units on either side. Simply remove the alignment knob with a chisel if there is a conflict.

4 as a ledge



Ledges in your wall can add design and functionality. Place the Coping unit so that it overhangs approx. 2.5-3"(60-75mm) and abut with short corner units on either side. Simply remove the alignment knob with a chisel if there is a conflict. Larger ledges up to 4.5" (115mm) may be created in garden or retaining walls where the back of the wall will not be visible.

Note: All components should be secured with approved concrete adhesive.

Design Style

To accurately determine the number of Standard and Jumper* units you will require, start by selecting an aesthetic Option.



Quantity Options



Estimate Calculator

Using the Design Style Option of your choice, use the chart below to determine your wall unit requirements for purchase.

	Wall Length	Wall Height <i>(excluding coping)</i>	Total Area	Total # of Pallets	Design Option	Order Quantities	
Wall Units	ft	x	ft = sq.ft	÷ 23sq.ft =	x	Standard Units 1 A 0.875 B 0.75 C	Standard Pallets
						Jumper Units 0.125 B 0.25 C	Jumper Pallets
Corner Units		x	# of Corner Locations on Project	÷ 9 =	x	Corner Units 1 A 0.68 B	Corner Pallets
						Corner Jumper Units 0.32 B	Corner Jumper Pallets
Coping Units					/	89.1 lin.ft =	Coping Pallets

Note: All automatic calculations are rounded up to the nearest orderable quantities.

*Jumper units are not available as a stock item in all regions. Please check with your area representative for availability.



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